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General Articles

THE PROBLEM OF TUBERCULOUS MILK*

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The subject for discussion this afternoon has received a great deal of attention within recent years. It has been considered by various Government Commissions, has been the subject of an enormous amount of literature and has been discussed to an almost tiresome extent at various Congresses in this Country and abroad. In spite of all the attention the subject has received there is still a great deal to be said, and much to be learned about it. One need not feel that any apology is necessary in opening a discussion on a subject responsible for the deaths of at least 2,000 persons, principally children, and the infection of another 4,000, annually. It is not much to the credit of this Country or the Public Health Service that such a serious loss of life, suffering and expenditure should be incurred by a preventable disease.

The legislation on the subject suggests that while different governments have thought that some action was necessary in order to protect the public from the dangers of tuberculous milk, they either did not know how best to legislate for that purpose, or if they did, they feared to do so for some reason, because there is no legislation of a compulsory nature to deal effectively with the problem. The problem is, however, one of real urgency and the consensus of opinion is that it must be tackled without delay, and to-day, I propose showing, as far as I can, what I believe my profession can do in the prevention of tuberculosis of bovine origin in man under existing legislation, but before doing so, I think it would be well to consider very briefly the existing powers to deal with the problem, and whether any appreciable benefit has resulted.

Powers to deal with Tuberculous Milk

The powers a Local Authority has to deal with tubercle in milk and its prevention are contained in the Milk & Dairies (Consolidation) Act of 1915, the Milk & Dairies (Amendment) Act of 1922, the Milk & Dairies Order of 1926, and the Tuberculosis Order of 1925. I need not go into the different sections concerned of the various Acts and Orders mentioned, because you are already familiar with them, but I would remind you that there is no obligation on a Local Authority to take any steps on their own initiative to find a single cow suffering from tuberculosis of any type or location, a fact as incomprehensible as it is astonishing. This legislation must have been seriously introduced with the object, *inter alia*, of reducing the amount of tubercle infection in milk, and yet to achieve this object Local Authorities are given a free hand to please themselves whether they will use the powers conferred on them to detect cows suffering from clinical tuberculosis particularly affecting the udder, or leave the matter entirely alone. The action taken by Local Authorities, generally speaking, has been disappointing, and is what might reasonably have been anticipated. The more progressive Local Authorities who had already taken steps to reduce the amount of tubercle in milk in their Districts, welcomed the new legislation, especially the Tuberculosis Order, as it gave them power to compel the slaughter of cows suffering from tuberculosis of the udder. Others showed their appreciation of the new powers by instituting new schemes for the detection of clinical cases of bovine tuberculosis, while the great majority did practically nothing to take advantage of the great opportunity offered to them.

I have mentioned this point advisedly because one frequently reads, or hears in discussion on this subject, that the Milk & Dairies (Consolidation) Act, the Milk & Dairies Order and the Tuberculosis Order have done practically nothing to reduce the amount of tubercle infection in milk, and I have noticed that the persons expressing these views are, as a rule, employed by or serving a Local Authority who have not utilised to any appreciable extent the powers conferred on them by these enactments for that very purpose. If they are speaking of the activities, or absence of activities, in their own districts, then it is possible to understand their views, but if their statement is an expression of opinion of the result of these enactments in the Districts of Local Authorities who have taken active steps, either by routine veterinary inspection or by combining veterinary inspection with the biological examination of mixed milk samples, then I flatly disagree. One has only to compare the number of cows dealt with under the Tuberculosis Order before and after the inauguration of active steps for the detection of cows

*Presented to the East Midland Branch of the Society of Medical Officers of Health at their Meeting on March 6th, 1934, in opening a discussion on "The Problem of Tuberculous Milk" from the veterinary standpoint.

disseminating tubercle bacilli in the Administrative Area of the same Local Authority. To illustrate my point, I give you the number of cows dealt with in Notts. under the Order since its introduction, and I think you will agree that by adopting the powers available under the Milk & Dairies Orders and the Tuberculosis Order, the Notts. County Council must have reduced very considerably the amount of tubercle infection in the milk produced in the County.

Table showing the Number of Cows Slaughtered Annually in Nottinghamshire since the Commencement of the Tuberculosis Order of 1925.

Year ended.	No. of cows suffering from tuberculosis of the udder.	No. of cows passing tubercle bacilli in milk.	No. of cows suffering from tuberculous emaciation.	No. of cows suffering from chronic cough, etc.	Total.	Result of *Post-mortem*.		
						Adv.	Not Adv.	Not affected.
31-3-26	10	—	117	48	175	148	25	2
31-3-27	12	—	107	49	168	155	11	2
31-3-28	3	1	120	59	183	168	14	1
31-3-29	21	1	51	65	138	119	19	—
*31-3-30	6	—	36	54	96	81	15	—
31-3-31	62	2	52	95	211	165	46	—
31-3-32	116	1	65	110	292	221	71	—
31-3-33	109	2	49	154	314	215	96	3

* Veterinary Department established April 1st, 1930.

The Tuberculosis Order is complementary to the Consolidation Act and the Milk & Dairies Order, and can by itself do practically nothing to reduce the amount of tuberculous milk. A short history of the efforts made by certain Local Authorities and the legislation dealing with this subject will help to illustrate the point.

After the Royal Commission on Tuberculosis definitely established that bovine tuberculosis could be and was communicable to man, especially children, but in one or two instances even before the Report was published, certain progressive and pioneer Local Authorities on this work obtained special powers by local Acts of Parliament, known as the Tuberculous Milk Clauses, to enable them to carry out the veterinary examination of any herd or herds supplying tuberculous milk, whether the herd was in the district of that Local Authority or not, provided that some of the milk from the herd concerned was being sold for human consumption within their district. Where the tuberculous milk was produced outside the City Boundary, and a cow suffering from udder tuberculosis was detected they had no power to compel the slaughter of the offending cow, with the result that in many cases the cow was removed from the herd, sold in the Market, and would continue to supply tuberculous milk maybe to the same Authority, as a result of whose activity she had been found. In consequence, the various Local Authorities who had adopted the Tuberculous Milk Clauses made representations to the Ministry of Agriculture and Fisheries and asked that power should be given to compel the slaughter of such cows. In 1914, the Tuberculosis Order was introduced making it obligatory for Local Authorities to deal with cows suffering from certain specified types of tuberculosis, of which udder tuberculosis was one, in their districts, but owing to the War, this Order was shortlived, and when the Milk & Dairies (Consolidation) Act of 1915 became operative in September, 1925, a new Tuberculosis Order was reintroduced to enable Local Authorities to slaughter tuberculous cows detected as a result of inspections and the biological examination of milk samples carried out in pursuance of their powers under the Milk & Dairies Acts and Orders. The real value of the Tuberculosis Order therefore depends on the steps taken by local Authorities under the Milk & Dairies Acts and Orders to detect dangerous tuberculous cows.

The Tuberculosis Order of 1925.

In view of the fact that under the Tuberculosis Order, the onus of reporting bovines suspected of suffering from tuberculosis as specified in the Order rests with the owner or person in charge or a veterinary surgeon who finds a cow so suffering in the course of his practice, with few exceptions, the cases reported are and will be in a very advanced state of the disease, and to pay compensation to the owners of such animals when they have already done about as much damage as they can do, seems an unjustifiable expenditure of public funds. Is

it unreasonable to suggest that no Treasury refund should be paid to Local Authorities who take no action or insufficient action under the Milk and Dairies Acts and Orders to detect cows suffering from tuberculosis as specified in the Order? Until some measures for the detection of cows actively disseminating tubercle bacilli are made compulsory, I think some action along the lines suggested is necessary to make Local Authorities realise their moral responsibility and their duty to the public whom they serve. I trust I have said sufficient to show that no material progress can be made under the existing legislation to reduce the amount of tuberculous milk until Local Authorities tackle the problem energetically by taking steps to detect all cows clinically affected with tuberculosis.

What measures can a Local Authority adopt for this purpose under existing legislation?

These measures are many, but optional, and to my mind all are important, although not equally so, and if combined and pressed with energy and enthusiasm very great progress would be made in the reduction of the amount of tubercle infection in milk, and what is of importance, the methods I shall mention can be practised now under present legislation.

1. A periodical veterinary inspection of the dairy cows in the district of the Local Authority can be carried out, and, if desired, controlled or checked by the biological examination of mixed herd milk samples.

2. Mixed milk samples can be collected at the farms or at any time before delivery to the consumer, either by the producing or consuming Authority, and examined biologically for the presence of tubercle bacilli.

3. In cases of congenital or acquired tuberculosis in calves found in the ordinary course of meat inspection, an endeavour should be made to ascertain the farm where the calf was born and fed with a view to tracing the source of infection. I trust I may be excused for mentioning here that from the distribution of the lesions in the viscera of a calf one can say whether it was infected from the uterus or from a tuberculous udder or both, and that this information is of great value to the veterinary officer in his effort to trace the cow responsible for the infection in the calf.

4. In the examination of carcases of pork and offal intended for human food, where tubercle is found an endeavour should be made to ascertain premises on which they were fed, with the object of tracing the source of infection wherever practicable.

5. In every *post-mortem* examination of a tuberculous cow, the uterus should be carefully examined to ascertain whether it is affected, and if so the last calf or calves to which the cow gave birth should be examined.

6. In certain selected cases of non-pulmonary tuberculosis in man an endeavour should be made to ascertain the milk supply to the patient for at least the last two years so that the herd or herds concerned can be examined to see whether any source of infection still exists.

For a concerted and determined attack on clinical bovine tuberculosis all these methods should be adopted wherever possible. Where meat inspection is performed, that is worthy of the name, the information is already available, and should be utilised for the purpose mentioned.

Owing to the limited time at my disposal, I propose to deal with the subject of routine veterinary examination of the dairy stock only, chiefly because of all the methods I have enumerated for the detection of tuberculous cows it is easily the most important, and is at the present time being actively discussed by so many Local Authorities.

Routine Veterinary Inspection

The clinical examination of dairy cattle by veterinary surgeons is not new. It has been carried out by a number of Local Authorities, chiefly County Boroughs, for a number of years, but it is only recently that County Councils have adopted the practice, which is growing rapidly.

The clinical examination of dairy cattle has as its object much more than the detection of clinical cases of tuberculosis, but as our subject is "The Problem of Tuberculous Milk," I must limit my observations to that aspect of the question, and it is quite sufficient. Any cow that suffers from tubercle in any degree is a potential source of danger to the public, as she may at any time become a clinical case of tuberculosis with involvement of the udder, and so become an actual danger to man. It is with the detection of the case that has already become a danger to man that I am particularly concerned at the moment. There are, of course, other forms of bovine tuberculosis that are detected by routine inspection with which, unfortunately, I cannot deal to-day, as I must try to keep my paper within reasonable limits.

It has been frequently written and said that cows may and do pass tubercle bacilli through the healthy mammary tissue into the milk, and while it would be rash to say that such could not or does not occur, it can be said with complete confidence that if it does occur it is so rare as to have no practical significance. I quote the following figures in support of that contention:—In Nottinghamshire, out of 52,081 cows whose milk was examined biologically, 279 were found with definite clinical lesions in the udder, and one cow was found passing tubercle bacilli in her milk with no clinical evidence in the udder. Let us take the number of cows as approximately 52,000, and that 50% would be tuberculous in some degree, then out of 26,000 tuberculous cows whose milk was examined biologically, only one cow showing no clinical udder lesion was found to be passing tubercle bacilli in her milk. The milk from this particular cow when examined microscopically

showed a high cellular content and the presence of cell groups, which I suggest indicates a definite lesion in the mammary tissue, although it could not be demonstrated after slaughter either by historical or biological methods at the Pathological Institute where it was examined. It must not be assumed, however, from such an examination, that because no lesion is demonstrated, there is not one present.

I submit, then, that all cows passing tubercle bacilli in their milk suffer from tuberculous mastitis, and at some time during the progress of the disease in the udder it can be detected by clinical examination, and in a very large percentage of cases confirmed by the microscope. Of the 280 cows previously mentioned suffering from tuberculosis of the udder, 240 were dealt with personally by me and of that number tubercle bacilli were found in the milk by microscopic examination in 222 cases, or 92.5%. I wish to emphasise here the extreme reliability of the microscope in the diagnosis of tuberculous mastitis. In my laboratory during the past 3½ years, tubercle bacilli have been found by microscopic examination in 343 samples of milk drawn from the diseased or suspected quarter, and in every case this diagnosis has been confirmed by *post-mortem* examination. The skill of the clinician depends on his ability to detect these cases at the earliest possible moment, but it is obvious that no amount of clinical skill can detect a case before there is any physical evidence of disease. In other words, there is a period in every case of tuberculous mastitis from the time the tubercle bacilli arrive in the udder until there is some detectable evidence of the result of their irritation and toxic activity, when it is impossible to diagnose the condition clinically and yet during a good part of this period the milk is infected. The duration of this period varies enormously, depending on several factors; chiefly, the method of infection, the dose, the virulence of the organism, the constitutional and local tissue resistance of the patient, and on whether the gland is in milk and, if so, at what period of lactation; but, generally speaking, if we exclude the rare exceptions, it would not be more than a few weeks, and in certain very acute cases, not more than a few days. There are, therefore, a number of cows passing tubercle bacilli in the milk that cannot be detected by the most skilled veterinary examination. As this is a matter of great practical importance, particularly from the public health aspect, it is necessary to ascertain the percentage or the number of cows that come within this category. In Nottinghamshire, the milk of 52,081 cows has been examined biologically, and of that number, 280 were found to be suffering from tuberculosis of the udder. This figure does not represent the total number affected, because in some cases in the investigation of tuberculous mixed milk samples it is found that cows almost certainly affected have been moved from the premises between the collection of the milk sample and the veterinary examination of the herd, and therefore cannot be included in the number. The figures for Notts. show that one cow in 186 is found to be suffering from tuberculosis of the udder, let us put it as approximately four in 750. Out of every four cows found suffering from tuberculous mastitis, three are found at the first clinical examination, and the remaining one detected subsequently as a result of further biological examination of the mixed milk of the herd. In other words, in Notts., for every four cows found suffering from udder tuberculosis, only three are detected by clinical methods; therefore in approximately every 750 cows examined clinically, one cow passing tubercle bacilli in her milk would remain undetected by clinical examination alone. Published figures of the incidence of udder tuberculosis in other parts of the country are appreciably less than those for Notts., *e.g.*, the Report by the Standing Committee of the Council of Agriculture for England on the Subject of the Purity of the Milk Supply, states that "It is estimated that at the present time somewhere about 3 per 1,000 cows in the herds of the country give tuberculous milk." This does not mean that the incidence of bovine tuberculosis in Notts. is higher than in other parts of the country; on the contrary, it is probably a good deal less because the incidence of the disease increases proportionately with the increase in milk production, and Notts. is not, generally speaking, a heavy milk-producing County.

Nottinghamshire is the only County, so far as I am aware, that has carried out extensively the biological examination of herd samples of milk collected at the farms, and the information concerning the incidence of udder tuberculosis thereby obtained shows that in all probability the estimated figure, namely three in 1,000 cows, given by the Standing Committee of the Council of Agriculture for England, is probably only about half the actual number, and in heavy milk-producing districts the number will be appreciably higher.

For the foregoing reasons, it is desirable that after each herd has been examined, the veterinary officer who performed the examination should collect a mixed milk sample from the herd for biological examination in order to detect any cows passing tubercle bacilli in their milk, but showing no clinical evidence in the udder. The additional cost of such a procedure would not be heavy, as one of the heaviest items in any system of sampling is the cost of collection. It should be mentioned that as the sample would be composed of milk taken direct from each cow, the milk of a great many cows could be added to the sample, and one would still get efficiency at a comparatively low cost. The added protection to the public would, in my opinion, amply justify the additional small expenditure.

Such a system would ensure that all clinical

cases of udder tuberculosis were detected immediately and slaughtered forthwith, while any cow showing no clinical symptoms, but passing tubercle bacilli in her milk, would be detected by the biological examination of the milk and subsequent clinical examination.

The frequency of these examinations is a matter of importance, and while bi-annual inspections would offer a very large measure of protection, quarterly inspections should be aimed at, and if such be carried out thoroughly by skilled and capable veterinary officers, the risk to the public from the dangers of tuberculous milk would be practically nil. In such a scheme I would make just one reservation, that the veterinary officer who makes the clinical examination should also carry out personally the microscopical examination of any sample of milk drawn from an udder suspected to be tuberculous. The microscopic examination of individual samples of milk for the presence of tubercle bacilli is, as I have shown, extremely reliable, but the best results are likely to be obtained where the microscopical examination is performed by the same person who made the clinical examination of the cow concerned, as a clear mental picture of the condition of the patient is an undoubted help in difficult cases.

In considering the question of the infection of human beings with the bovine bacillus, it would be a matter of great importance to know something of the amount of infection necessary to produce the disease. This must vary with a great many factors, and is an aspect of the subject that is your particular province, but in view of its outstanding importance in relation to routine veterinary inspection, I should be very glad if it could be included in the subsequent discussion. When we consider the frequency with which milk is infected with the tubercle bacillus one is almost compelled to the belief that to produce the disease in children a fairly heavy dose, or oft-repeated small doses of infection, which is more probable, are necessary. If my premise be accepted, that children are not readily infected, then it very strongly supports my contention that the scheme I have outlined, namely, quarterly routine veterinary inspection to remove gross contamination from tubercle infection, followed by the biological examination of the milk to detect cows passing tubercle bacilli in the milk but showing no clinical evidence of disease, would render the risk of infection from milk infinitesimal.

I feel I cannot conclude my paper without a very brief reference to the question of pasteurisation, and in doing so, I should like to say that I view the subject with a perfectly open mind, free from prejudice, and that I am prepared not only to accept but to give my whole- hearted support to pasteurisation provided I am satisfied that it is the best means, when considered from every possible angle, of dealing with the problem.

The problem of tuberculous milk has two aspects, the Public Health one, and the Agricultural one, and they can be dealt with separately or as one and the same problem, which in reality they are. If dealt with separately, the expense to the country (which is, of course, the milk consumer), would be heavy because it would include the expense of pasteurisation, including the supervision of the process by the Local Authority, and the steps taken to deal with the disease in cattle ; whereas if milk could be kept sufficiently free from infection to render the risk to children negligible by tackling the problem of tubercle in cattle, the expense would be very much less. Pasteurisation is costly, and has been estimated at Id. per gallon, plus the cost of the supervision of the process by Local Authorities, and would have to be borne by the consumer. I am not going into cost and who would have to bear the burden. I know nothing of these matters, except that one can ignore all the trade arguments, because I am sure we have all learned from past experience that it is the consumer who pays in the end every time. In a word, my contention is this, that whether you have routine veterinary inspection or pasteurisation the public pay just the same ; that veterinary inspection would be cheaper and give very much better results, because it is striking at the root of the trouble and not merely dealing with the results. Routine veterinary inspection has never been properly tried, and before it is judged it is entitled to a fair trial—but it must be a fair trial ; that is, conducted by capable veterinary surgeons, specially trained, properly equipped with the necessary laboratory apparatus, etc., and supported in their efforts by the Local Authority.

The question of the amount of infection necessary to produce the disease in children is an important one. The only milk that can be absolutely free from any risk of bovine infection is milk from tubercle-free herds, and we are a long way from that ideal, although it must be our objective. I have shown that so far as Notts. is concerned, approximately one cow in 750 would be giving tuberculous milk and could not be detected by clinical examination, but the cow would be detected later on by the biological examination of the sample collected from the herd immediately following the clinical examination, so that the milk from that herd would be tuberculous during the period of the biological examination. Nothing can prevent that. There is also the risk if a cow developing tuberculous mastitis between the veterinary inspections, but I consider this a small risk so far as any danger to man is concerned, because if the inspections are carried out quarterly and checked by biological examination of the mixed milk of the herd, the milk could only be tuberculous over a very brief period.

But what of pasteurisation ? Laboratory and commercial pasteurisation are two totally different processes. One is a scientifically controlled experiment, the other a process that has been found

necessary in order to increase the keeping quality of the milk with the object of increased profits. I may be a very simple soul, but I cannot see why the big retail milk distributors have become so terribly concerned, particularly recently, about the health of the public. If this desire is as genuine as they would have us believe, it is most commendable and suggests the advent of a new era in commercial undertakings. Some of us, however, may be rather suspicious of commercialism masquerading as altruism.

Routine veterinary inspection conducted on the lines I have suggested would reduce enormously the amount of tuberculous milk, and by dealing with the disease in the cowshed, would not only benefit the public, but also agriculture. It would also result in a tremendous decrease in the incidence of tuberculosis in pigs, and that disease, already rare in the horse, would in all probability disappear. All that pasteurisation offers so far as the dangers of tuberculous milk to man are concerned, is a reduction in the amount of infection in milk—not freedom from it, as has been clearly shown by the recent Report of the Department of Health for Scotland published by the Medical Research Council.

I submit that an adequate system of routine veterinary inspection of the dairy cattle in this country can do that and a great deal more, and should be adopted as the most rational means of beginning the struggle with the ultimate object of the eradication of bovine tuberculosis from the Country.

USE OF STEEL TRAPS

At the annual meeting of the British Field Sports Society, Lord Bayford (presiding) said that with regard to steel traps the society had done what it could towards furthering the invention of a humane trap. Up to the present they had had no success.

A resolution was proposed by Captain W. H. Buckley, M.F.H., "that the society keep a careful watch on the promiscuous setting of steel traps in the open in view of the damage and suffering caused to animals and birds."

Captain Hume proposed as an amendment that the society give its support to the Bill promoted by the University of London Animal Welfare Society, for the abolition of steel traps.

The Chairman said that the Bill absolutely prohibited the use, sale, or possession of steel traps under heavy penalties. The committee had considered the matter and decided it was of too controversial a nature for the society to deal with.

The amendment was lost by a large majority and after further discussion the matter was referred to the main committee for further consideration.

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Foot-and-mouth disease has broken out on the Nuanetsi Ranch in Southern Rhodesia. The Government have issued a standstill order, stopped all movements of cattle to the Johannesburg market, and imposed quarantine. Recurrence of the disease so soon after the outbreak in 1931 has come as a shock to the whole Colony.

THE SELECTION OF THE COMMERCIAL HORSE

We have pleasure in publishing herewith the first of a series of articles, obtained from authors prominent in the commercial horse world, in continuation of the contributions appearing under this heading in our issue of June 30th. It is hoped to continue the series weekly.

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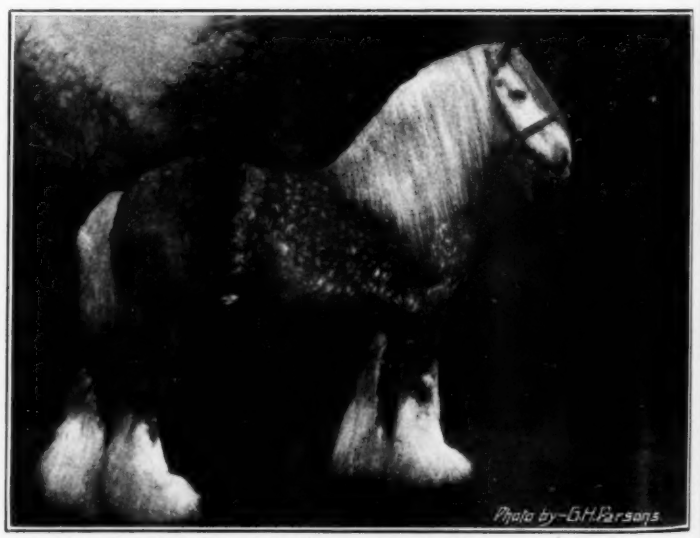
VII.—THE SHIRE IN COMMERCE AND AGRICULTURE

JAMES FORSHAW
Newark

"The Great Horse"—as he was called before May 20th, 1878, when, at a meeting convened by influential patrons and breeders highly interested in this noble draught horse, it was decided to form a Society to preserve the accumulated pedigrees, already ancient and numerous (one pedigree goes back to 1755 "*Packington Blind Horse*") and to use its energy to improve and protect this famous and popular breed henceforth to be known as the "*Shire Horse.*"

Popular he was then and popular he still remains.



(1) CARLTON GREY KINGMAKER. SIRE OF THE FEMALE CHAMPION, 1934 (ROYAL SHOW). *Owners: James Forshaw & Sons.*

On page 84 of "The Horse Owners' Reference Book" issued by National Horse Association of Great Britain, The following statistics are published for England and Wales under the Horse Breeders' Act of 1918:

1931. Shires licensed numbered 761.
1931. All Other Draught Breeds 342.
1933. Shires licensed 888.
1933. All Other Draught Breeds 387.

As all stallions that travel must have licences, this speaks for the popularity of the Shire with breeders.

Why this popularity? Because the Shire is a most docile, tractable breed. Shires can be handled by anyone; yet, though they are so quiet, they are active, sharp, of great pluck and courage, strong with good nerves and not easily perturbed, and they have such size and power, and are so built and balanced, that they manage the biggest loads with the greatest ease.

And what loads they can and do draw! Two to five tons single horses can draw easily. At the Official Trials in London, before a properly constituted authority, two horses moved, on wet granite setts, 18½ tons; and at the Agricultural Hall, Islington, two horses moved 16½ tons—as a matter of fact the shaft horse moved the 16½ tons before the leader got his chains tightened, and they did this quietly and deliberately.

It is on account of the Shire's size, build and general balance, and the correct angle of his legs, that he is enabled to move these great weights so easily. He runs from 16·1 to 17·2 hands in height, is thick through the heart and girth, with a short, compact back. He is strong of loin, his shoulders are well laid, with room for the collar to rest on. Big in bone and powerfully muscled, he possesses a solid deep foot, deep at the heel and thick in the walls. The pasterns are well set but short and at the right angle, and therefore act as springs to absorb concussion without losing any strength. The Shire is thus well master of his work either in commerce or agriculture and lives many years. There is not a town of any size in England or Wales where his honest, bold face and Roman nose, stocky build and sharp cheerful action are not to be seen.

On the streets of our towns his good qualities are well known; railways, councils, coal merchants, brewers, and hundreds of other traders use him, for he can trot when required with any reasonable load or back empty after delivering his load, with the least effort; moreover, he always has his pluck in the right place, for he gets off the mark quickly, and he can keep it up all the day through.

Being well balanced, his top is in proportion to his limbs, and therefore he is not liable to break down (for the strength of a chain is that of its weakest link), and he is a good feeder and hardy. Dealers are generally sure of a supply of Shires, for auctions of this breed are continually being held all over the country in the districts where he is bred and there are also numerous private

[Copyright, W. W. Rouche & Co.

(2) THE SHIRE GELDING AT WORK.

(This horse is closely related to Carlton Grey Kingmaker.)

breeders and owners ready to sell, at a reasonable price, from which to draw supplies.

From an agricultural point of view, breeders of livestock have found the breeding of Shire foals about the most profitable undertaking they have had during the last three years, for they have been and are in demand.

Many farmers breed and work their horses from two years old in the team; when they reach five to six years of age they are sold and the money placed in the bank, and the farmer goes to his field and fetches out another two-year-old to break in. Thus his work is being done and his horses are always increasing in value—a factor of which he fully realises the benefit. Similarly, the farmer who buys a few foals each year, breaks them in in like manner and works them up to five and six years of age.

Another factor that tends to encourage the use of draught horses is that when their commercial work is done there is still a period of good work left in them to enable their being put back on the land; in fact, I know several Shires that are still in good order after a long period on the land. Following their full commercial life, therefore, when sold by the town user for this purpose they save a certain amount of depreciation on cost price and thus reduce their price to the commercial user.

The modern Shire is a vastly improved horse: gone is the rough hair on the legs—so much so that some Scottish friends congratulated me at the Shire Show, London, on the great improvement that had taken place during the last four years; also, at the Royal Show recently held at Ipswich, the same improvement was registered and the Shire geldings there were simply magnificent—each animal well worthy of his name, "England's Great Commercial Horse."

DISCOVERY OF VITAMINS: ALBERT MEDAL PRESENTED TO SIR F. G. HOPKINS

The council of the Royal Society of Arts attended at Clarence House on July 11th, when the Duke of Connaught, president of the society, presented the society's Albert Medal for 1934 to Sir Frederick Gowland Hopkins "for his researches in bio-chemistry and the constituents of foods."

The Duke of Connaught said that Sir Frederick Hopkins's discoveries in the domain of pure biochemistry had not only enriched this science, but had done much to make it a distinctive subject for study, attracting a large and enthusiastic body of research workers. In consequence the world had acquired a clear conception of the vitamins, of the part they played in health and disease, and their distribution in various foods. As a further result, nutrition, the feeding of a nation, was becoming a more exact science, to the benefit of the health of everyone.

Sir Frederick Hopkins briefly replied.

Biographical Article

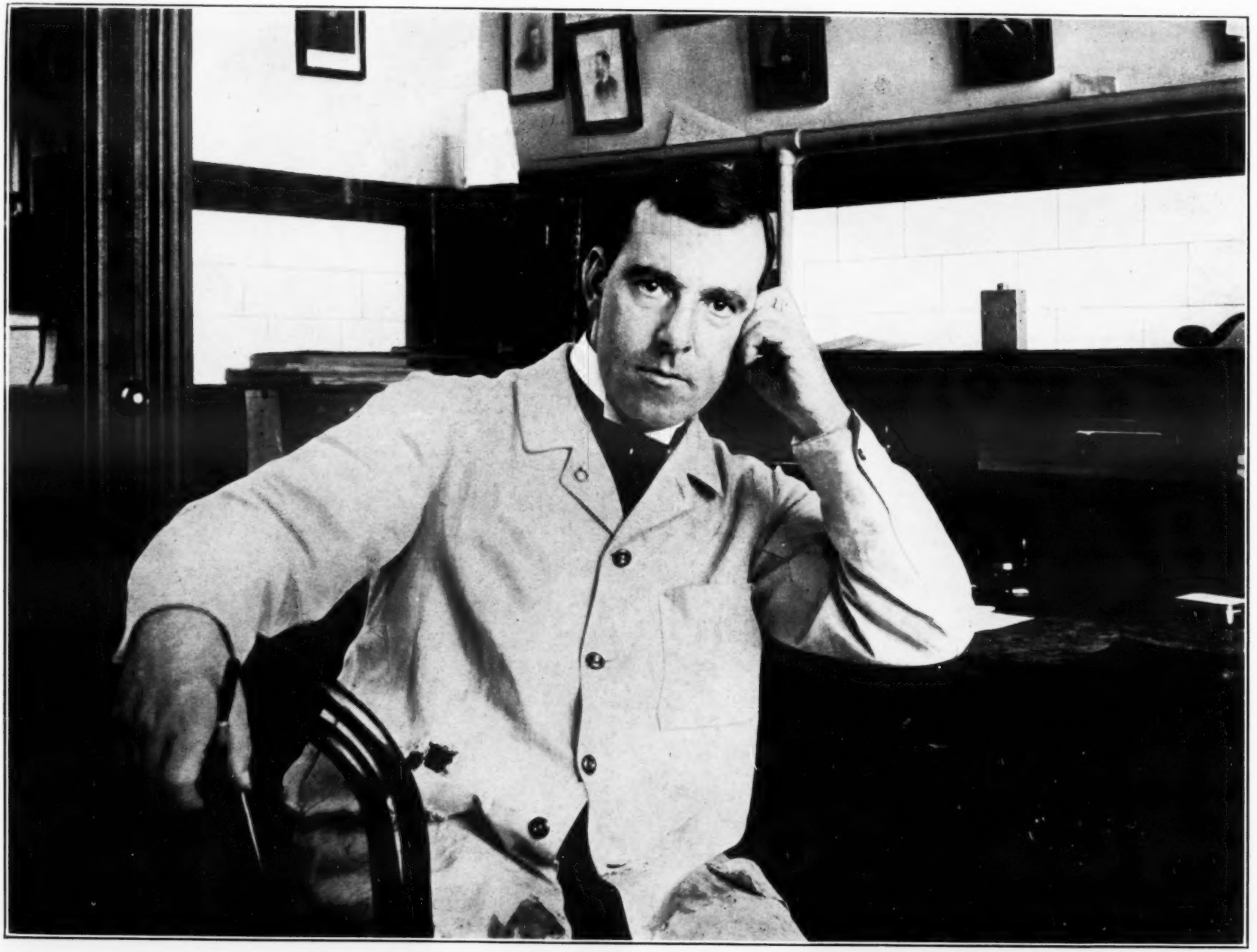
PROFESSOR WILLIAM BULLOCH, M.D., LL.D., F.R.S.

A Friend of the Veterinary Profession

The conferment recently of the title Emeritus Professor of Bacteriology in the University of London upon Dr. Bulloch gives us an opportunity of paying a sincere tribute to this learned, distinguished, and amiable member of the medical profession. The veterinary profession has good cause to remember him with gratitude. Within a short period of years we have witnessed an almost phenomenal growth in veterinary research; this is shown by the numbers of young veterinary surgeons who now find employment wholly or partly in this form of activity, by the facilities, institutional and otherwise, provided by Government and other authorities for the purposes of research, and, generally, by the public recognition of the need for research as the surest and most economic means of obtaining solutions to many of the grave problems in animal disease that are still with us.

This rapid expansion of veterinary research in Great Britain may be said to date from the publication of the Report of the Advisory Committee on Research into Diseases in Animals (Development Commission), 1922. It had been borne upon the ministerial authorities of that time that there was a pressing need for carrying out more research into the diseases of animals; doubtless they had in mind the controversies that had been raging about the allocation of this work, which in their purport had often tended to imply that it ought to be taken up by medical or other people for want of sufficient competence within our profession. The Advisory Committee, comprising eminent medical men, veterinarians, and agriculturists, presided over by Sir David Prain, deliberated upon this position very carefully, but following upon the evidence tendered by Dr. Bulloch, holding the position he did at the time in the world of bacteriologists and commanding the confidence of all the Committee as no one else, the issue was left in no doubt. These are the words of the Report (page 11) dealing with this evidence:—

> "Dr. William Bulloch, Professor of Bacteriology in the University of London, who had acted as Examiner in Pathology to the Royal College of Veterinary Surgeons, stated in the evidence before your Committee that he had set exactly the same papers for veterinary students as for medical students, and that in one case he had used the same paper as had been set for candidates for the Pathology Prize for the London Hospital Medical College. It was his considered opinion that veterinary students were better grounded in Pathology than medical students. Your Com-



WILLIAM BULLOCH, M.D., LL.D., F.R.S.
EMERITUS PROFESSOR OF BACTERIOLOGY IN THE UNIVERSITY OF LONDON

mittee think it well that his opinion should be placed on record in view of strictures which have been passed on the standard of training at the Veterinary Colleges."

Born in 1868, and educated at Aberdeen Grammar School, Dr. Bulloch received his early medical training in the University of Aberdeen, where he came, as did many others who have acquitted themselves with distinction in medical pathology, under the influence of the renowned teacher, Professor D. J. Hamilton, who has sometimes been called "the father of all pathologists." Certainly, Professor Hamilton's great interest in the study of braxy and other animal diseases may have awakened in the minds of his pupils the kindly understanding which many of them are well known to have of the outlook of the veterinary surgeon.

Subsequently, Dr. Bulloch continued his studies on the Continent, at the universities of Leipzig, Vienna and Paris. Bacteriological research, then in its infancy, was growing up around the towering personalities of Pasteur and Koch, and the schools of tireless pioneers with which these great masters surrounded themselves revelled in an output of discovery such as is hardly likely to be seen again. They were fired, so said Roux, Pasteur's most famous pupil, with enthusiasm because of the rich harvest they garnered from the virgin fields into which Pasteur took them. Dr. Bulloch himself, with his sensitive and impressionable Highland temperament, could not escape catching the spirit pervading around him in those days, for the lasting good of the many people and places in his own country he has lived since to serve and inspire. In the graceful appreciation which he contributed early this year upon Roux, Dr. Bulloch says: "No account of Roux would be complete without reference to him as the greatest bacteriological teacher of his time. . . . I was in his class in 1894-1895 and can never forget him either as a technician or as a speaker whose eloquence and enthusiasm could hold his audiences spellbound. I have listened to many teachers at home and on the Continent but I have never been impressed as I was by Roux, who was then in his prime." The impression made upon young Dr. Bulloch then must have been a deep and an abiding one: the unique position which he has now come to hold in medical science can be explained by his steadfast devotion to the high ideals then implanted in his mind.

Following upon some further study at King's College, London, he was for a short time at the beginning of his career Assistant Professor of Pathology, University College, London, and then Bacteriologist at the Lister Institute of Preventive Medicine. In 1877 he was appointed Bacteriologist to the London Hospital, and he has remained at the institution since then, while the department under his charge has grown into one of the most productive centres of research in medical bacteriology in this country. At the present moment, when whole-time research posts are numerous, and often well-paid, at least, for beginners, it would surprise many of the young people who hold them if they were made acquainted with the emoluments of those to whom they owe their comfortable situations—content as those early pioneers often were to have given to them the bare facilities for carrying out their beloved research outside ordinary working hours. From 1919 onwards, Dr. Bulloch's post at the London Hospital was that of Goldsmith's Professor of Bacteriology at the Medical College.

He came into intimate touch with the veterinary profession during his tours as examiner in Pathology for the Royal College of Veterinary Surgeons, in 1904-1906. He has also on occasion officiated as examiner afterwards in the same subject. Some of his best stories—in the telling of which he has few equals—are those about his experiences during those tours; his appreciation of his fellow examiners in the more veterinary subjects remains a very high one. He has had good opportunities for comparing candidates at veterinary examinations with those at examinations for medical degrees, for in his time he has also acted as examiner in Pathology for the universities of London, Leeds and Liverpool. In other ways, too, he has come into close touch with the veterinary profession: he is one of the members of the Foot-and-Mouth Disease Research Committee; he is on the Managing Committee of the Research Institute of the Royal Veterinary College, Camden Town; he has been close friends with many well-known veterinary workers, such as, for example, Sidney Villar, during his early days at Elstree while he was at the Lister Institute, Sir John McFadyean (the award of the Parker-Weber Prize in Tuberculosis to whom recently gave him the deepest gratification), and the late Sir Stewart Stockman. For the outstanding forerunners of modern veterinary research—like Nocard, McFadyean and Jensen—he bears a degree of reverence akin to what he feels for the pioneers on the medical side.

Dr. Bulloch's own contributions to the advancement of technical bacteriology are of a high order. Upon medical science, however, his influence has been one far transcending that of a good technician. He was one of the original members of the Medical Research Council, and during the early, rather difficult, days of this body, especially during the War and immediately afterwards, he gave to it an

enormous amount of time and hard work; some of its most important publications testify to his erudition and exact bibliographical research. He is Honorary Librarian to the Royal Society of Medicine. He is Chairman of the Board of Governors of the Lister Institute of Preventive Medicine, in succession to the late Sir David Bruce. Robust in health and mind, freely communicative and speaking his mind frankly, without reserve, whenever he perceives indolence, vulgarity or pretentiousness, contemptuous of officialism, yet bearing malice towards no one, and withal fervid for research, liked by all, and full of the joy of living, Dr. Bulloch can be said to be an ideal Chairman of Governors of a great research centre and an apt counsellor in any big scheme of research. He has come now to hold a position which it would indeed be hard to fill with any other man now living, namely, as historian of a great period in the history of medicine and biographer of the remarkable men of that period, who to him were on mere craftsmen in their calling. From his writings, one gathers that these men did not merely register advances that were more or less inevitable at the time in view of the cumulative trend of human knowledge, but rather that they stood out, like the founders of the great religions and world movements, as heroes, in the Carlylean sense. It was their vision that illumined new vistas in medicine, their faith that shattered age-long prejudices and ignorance, and their example that inspired followers to ceaseless ardour in their quest for more truth. Thus, for instance, writing upon the story of Koch's classical paper (1884) on the etiology of tuberculosis, he continues: "The decade following Koch's work created a voluminous literature, and was largely occupied in filling up trivial lacunæ, but everywhere his observations were confirmed in all essential details."*

Dr. Bulloch's biographical writings are characterised by keenly critical judgment and human sympathy, and they are scrupulously accurate, and devoid of verbosity. He seems to have been endowed with a familial gift in this respect, for it is shared at any rate with his brother, J. M. Bulloch, the eminent literary critic and late editor of the *Graphic*. One of the most moving prose passages that has been written, we think, of recent years is contained in the article† which he contributed upon Kitasato (1852-1931), the most famous bacteriologist of Japan, "who made for himself an enduring name in the history of medicine" by his classical researches into tetanus, plague, and other diseases. We feel somehow that this passage reveals the intimate ideals and aspirations of Dr. Bulloch himself and that they are such as he would like to see reflected in all those men and women who are happy successors in the beneficent pursuit that was launched so nobly not so very long ago by the great-souled pioneers whose lives he has so well recorded.

> "In 1885 he [Kitasato] was sent by the Japanese Government to study bacteriology in Berlin under Robert Koch who was then nearing the height of his fame. Kitasato remained with Koch at the Hygienisches Institut from 1885 to 1891 first as pupil and later as an independent worker with the title of Honorary Professor in the University of Berlin.
>
> "Robert Koch was a dominating personality, and on all his pupils that I have ever met he had the power to arouse extraordinary enthusiasm and admiration for his scientific achievements and also affection for his personal qualities. Kitasato was no exception to the rule and on him Koch's effect was magical and lasting. To the end of his life he strove to justify his association with Koch and ever spoke of it with the highest pride. Long years after their happy and successful Berlin days Koch visited Japan (1908) and his old pupil, now a famous man, received him with open arms and was in the forefront of the Japanese medical profession in making Koch's visit to Nippon almost a national event. Kitasato was also instrumental in raising a monumental stone to Koch at Kamakura (on the Sagami bay of the Kamagawa peninsula near Yokohama.) This *Gedenkstein* has an inscription in Japanese so full of veneration and affection and so simple and beautiful that I am tempted to quote its words. It runs: '*In the forty-second year of the reign of Meiji in the seventh month the great German professor and teacher Koch, professor in Berlin, came to Kamakura. He pitched his tent here on the mountain of spirits and morning and evening he walked about with Professor Kitasato to enjoy the beauty of the mountain and the temple. He returned to his western home where he died not long afterwards. The owner of the mountain has joined with others in erecting this monument in commemoration of Koch's loved spot. This place was chosen as one around which the waves of the sea dash and storm and above which gleams the snow-white peak of Fuji-no-yama already renowned in olden times through the great battle of the famous Japanese hero, General Nitta. Here by Inamurasaki he cast his sword into the sea and hither came the great man across the ocean, looked across to Fuji and loved the place. Therefore let this stone remain here as a lasting memorial.*'
>
> "'*Written in the first year of the reign of Taisho in the ninth month, by Nagasaka Shuki.*'
>
> "There is something impressive in the veneration of Kitasato for Koch for Miyajima tells us that he erected a shrine to Koch in the inner court of his institute and on the anniversary day of Koch's death (May 27th, 1910), he commemorated with appropriate Shinto rites the memory of the soul which had departed."

* Med. Res. Council's System of Bacteriology (1930), v, 154.

† *Jl. Path. and Bact.* (1931). xxxiv. 598.

Annotation

CATTLE DISEASES COMMITTEE: ADMINISTRATIVE CHANGES RECOMMENDED*

(*a*) Veterinary Inspection.—This important section of the report begins by stating that routine veterinary inspection of dairy cattle should be made obligatory for all local authorities. After a discussion of the advantages and disadvantages of a State as opposed to a number of local veterinary services, a majority decision is reached to the effect that the veterinary staffs of the local authorities should be expanded and that the local veterinary services should be placed upon the same footing as the public medical services. Chief veterinary officers should only be appointed or dismissed by local authorities with the approval of the Ministry of Agriculture in England and Wales. The Ministry of Agriculture should have the same powers and duties in relation to the veterinary services of local authorities as the Ministry of Health has in relation to the public health services of local authorities. The Ministry of Agriculture should contribute towards the maintenance of the veterinary service established by local authorities, the basis of contribution being the cow population within the controlled area. By virtue of this contribution the Ministry would be able to enforce the desired standard of local service. For the purpose of central co-ordination the country should be divided into regions or administrative areas and within each of these the Ministry of Agriculture should establish an administrative centre under the control of its own officer. The regional officer of the Ministry of Agriculture would act as a liaison between local authorities and the central department of the Ministry; he would be responsible to the Ministry for securing uniformity of administration within his own region; he would be the officer of the Ministry to whom application would first be made upon the outbreak of an epizoötic in any part within that area; he would act in an advisory capacity in relation to local veterinary services and chief veterinary officers, in an administrative capacity as representing the Ministry of Agriculture and in an executive capacity upon the outbreak of an epizoötic.

The functions of the proposed veterinary service would be—

(1) the present duties of veterinary inspectors of local authorities under the Diseases of Animals Acts, and Orders issued under those Acts;

(2) the veterinary duties falling to be performed under the Milk and Dairies Acts and Orders, including the extension of the routine clinical examination of dairy cattle which would result from the amendment of the present Orders so as to require that such examination should be made throughout Great Britain;

(3) the testing of cattle with tuberculin for the purposes of the Milk (Special Designations) Order;

(4) the duties placed upon veterinary officers under the scheme for the eradication of bovine tuberculosis;

(5) any functions that may be imposed upon them in connection with other diseases of livestock and poultry.

Close co-operation should be established between the sanitary authorities and the veterinary service, especially in regard to the design of cow-houses and their modification when eradication is in progress. The functions of sanitary authorities under the present Milk and Dairies Orders should not be diminished.

A consideration of the duties outlined above indicates that much veterinary work which is at present carried out by practitioners will be undertaken by this new service; thus these duties include the whole of the tuberculin testing of cattle and also the examination of the health of those cattle about to be introduced into the tuberculosis-free herds. In addition, free advice on methods of feeding and hygiene and further on methods for freeing herds of disease is to be given to all those farmers wishing to free their herds from tuberculosis. But more inroads upon his work may be expected by the practitioner, for the last provision is vague and indefinite but looks forward to the transfer to this new veterinary service of "any functions that may be imposed upon them in connection with other diseases of livestock and poultry." As the Committee has so often allowed considerations of possible economic stress likely to be inflicted upon certain classes, *e.g.*, the producer-retailer, to dissuade it from making certain recommendation that appeared to be more logical from the scientific and other evidence considered by it, one might have expected the Committee to recommend very strongly that the veterinary practitioner should be included in this new service. But after consideration of the problem it is recommended that the general practitioner be not included in the scheme, except until such time as a sufficiency of new veterinarians, each possessing the D.V.S.M., shall be available. In the view of the Committee the advice given by veterinary surgeons in the public service, by directing the attention of the farmer to the incidence of disease in his animals, tends to make him call in his own veterinary surgeon more freely for the purpose of treatment. With this

* Annotation on Section VIII of the Report of the Cattle Diseases Committee of the Economic Advisory Council.

view most veterinarians would agree, but it will be realised that the net result to the practitioner must depend not only upon the effects of this suggested educational work but also upon the amount of work taken away from the practitioner. In the present scheme many will contend that the latter far outweighs the good that might accrue from the former. Unfortunately, the evidence is not given which has persuaded the Committee that the experience of counties employing part-time inspectors, when compared with that of counties employing full-time officers, leaves no room for doubt that the employment of part-time officers is generally unsatisfactory. It is thus difficult to express our opinion upon this conclusion, but one feels tempted to suggest that the conditions under which the whole-time man works are different from those of the part-time man. By this one means that the number of tests per year, etc., are not likely to have been the same. It is evident, however, that this thorny question needs the most rigorous examination by the profession and that the alleged disloyalty or inefficiency on the part of a few practitioners, if present, should be attacked very severely by the bulk of the profession. It must be conceded by all that many practitioners have done most important and highly skilled work over a period of many years in helping farmers reduce the amount of tuberculosis in their herds. In any instance, as the total number of veterinarians that is likely to be required in such a service would be some 300, the Committee itself visualises the employment of part-time inspectors for the initiation of the scheme.

(*b*) A scheme for the eradication of bovine tuberculosis

The only remedy for the condition into which our dairy industry has been allowed to fall is the complete eradication of bovine tuberculosis from the herds and immediate action is needed. The limiting conditions of such action at the outset are the lack of trained veterinary staff and the shortage of healthy cows available to replace those infected. The unco-ordinated initiative of individual farmers under the stimulus of higher prices for pure milk at a rather distant future will not of itself create the necessary conditions for any general advance. Breeding of clean young livestock should be stimulated first in those herds most suitably situated for eradication and next, in the producer-retailer herds nearest the great cities.

The scheme as outlined consists of six parts;

(1) the institution of a list of tuberculosis-free herds ("accepted herds") tested with tuberculin from time to time under official supervision, and declared to be free from bovine tuberculosis;

(2) the provision of free advice and free tuberculin testing for approved owners of herds who agree to make *bona fide* efforts to free their herds from tuberculosis or who have established free herds;

(3) financial help where necessary by way of loans or the guarantees of loans to approved owners for the purpose of undertaking expenditure required by the veterinary inspector as necessary for eradication;

(4) the securing to owners of disease-free herds of a higher price for their milk than that obtained by other owners;

(5) the taking of administrative measures designed to secure that tuberculosis-free cattle from accepted herds should be moved about the country and exposed for sale without running the risk of being brought in contact with other cattle;

(6) the adjustment of regulations governing the production of graded milks and the grades of milk officially approved, and the making of regulations relative to the compulsory pasteurisation of milk with a view to increasing the incentive to farmers to eradicate tuberculosis from their herds.

The local authority and the farmer would enter into agreements. The farmer would undertake

(*a*) to pay for the testing of his herd by the local authority at six-monthly intervals with approved tuberculin at a standard charge to be laid down by the Ministry of Agriculture;

(*b*) to take all reasonable steps to carry out the directions of the veterinary inspector of the local authority relating to the freeing of his herd from tuberculosis;

(*c*) to obey the regulations issued by the Ministry of Agriculture relating to supervised herds.

The local authority would undertake

(i) to test the farmer's herd with approved tuberculin at six-monthly intervals;

(ii) in the event of his having fulfilled the conditions of the contract to the satisfaction of the local authority, to refund the sum received in payment for the testing of the herd with tuberculin at the time of the next step.

Herds, the owners of which entered into such agreements with local authorities, would be known as supervised herds. Any supervised herd which passed two consecutive tests would become an accepted herd and would remain an accepted herd until a tuberculous animal was revealed. The Ministry of Agriculture would maintain lists of accepted herds and would arrange for them to be published on a county basis from time to time. The regulations regarding the frequency of re-tests would vary from district to district in accordance with the

disease situation in each, but at the outset such tests should be made once every six months.

Until a considerable number of accepted herds existed it would be necessary to allow the introduction of animals into a supervised herd when these animals do not necessarily come from an accepted herd but are non-reactors; they should be kept apart from the free herd for an interval of at least two months and then must pass a second test.

It is essential that the personnel of a farm where eradication is in progress should be perfectly healthy.

A clause should be inserted in all contracts for the sale of milk indemnifying the seller, if, by reason of his having disposed of diseased cattle on the direction of the veterinary inspector, the quantity of milk delivered falls below the prescribed minimum by an amount not exceeding that yielded by the cows at the time of such disposal.

(*c*) Regulations governing the grading of milk and pasteurisation

All milk sold for consumption in liquid form should be required to be sold under one of the following official designations:

(1) ***Certified milk,*** namely, milk which has not undergone any process of heat treatment and is derived from tuberculosis-free herds. It should not be required to be bottled on the farm.

(2) ***Pasteurised milk,*** namely, milk which has undergone once only the approved process of heat treatment. Pasteurisation should be permitted only in a plant licensed for the purpose.

(3) ***Sterilised milk,*** namely, milk which has been raised to the boiling point or higher in a plant licensed for the purpose, the milk having undergone no other process of heat treatment.

(4) ***Milk (uncertified),*** namely, milk which has undergone no form of heat treatment, and is not derived from tuberculosis-free herds, but which attains a certain hygienic standard. No suggestions are made as to what this standard should be or whether it should improve as the scheme proceeds. No milk which has been held in any vessel containing more than 100 gallons of milk, unless derived from a single herd, should be sold for consumption in liquid form unless it has subsequently been pasteurised.

The councils of urban districts the population of which exceeds 100,000 should have the right to prohibit the sale of milk (uncertified) after a date which shall be not earlier than five years after the initiation of the scheme of eradication, provided it has given not less than two years' notice of its intention to do so.

(d) Recommendations with regard to other diseases of cattle other than tuberculosis

The chronic streptococcal form of mastitis can be controlled only if laboratory tests are made of the milk of each of the cows so as to reveal those cases which, though capable of spreading infection, have not developed clinical symptoms. It is recommended that an examination be made of the existing laboratory equipment and scientific personnel devoted to veterinary preventive medicine and that such steps are taken as are necessary to secure that this service is available to farmers through their veterinary advisers in return for the payment of a fee to cover the cost.

As regards Johne's disease and contagious abortion it is recommended that the schemes of research under the Agricultural Research Council should be prosecuted vigorously.

The Milk Marketing Boards should be invited to adopt the principle that their funds should be expended on research in regard to dairying and animal diseases only after consultation with the Agricultural Research Council and in a manner that will not conflict with schemes of research already in progress.

It is further recommended that the Ministry of Agriculture and Fisheries should approve a standard for tuberculin and should provide that it should be sold only to qualified veterinary surgeons.

Amongst the financial recommendations it is advocated that the costs of the increased veterinary services and laboratory work and of free tuberculin testing would be met from national or local funds.

In conclusion, it is probably safe to say that the bulk of the profession is in agreement with the general scheme outlined in the Report but that there will be regret by many that the Committee has seen fit to conclude, one thinks wrongly, that the veterinary practitioner is unable to play a useful part in its prosecution.

W. R. W.

THE LATE MAJOR PEELE'S POST

At a recently held meeting of the Durham County Agricultural Committee the Chairman (Alderman T. Davis) made sympathetic reference to the death of the Chief County Veterinary Officer (Major H. Peele).

A sub-committee recommended that they should be given power to appoint a successor to Major Peele on the same terms—a salary of £750 per annum, rising by annual increments of £50 to a maximum of £900 per annum with an allowance of £200 per annum to cover all travelling and other expenses. In the event of one of the assistant veterinary officers being appointed, they asked to be empowered to fill the vacancy thus created.

An Amendment, moved by Alderman Purvis, that the post should be advertised, was carried by 22 votes to seven.

Clinical Reports

SPONTANEOUS HYPERÆMIC SUBLUXATION OF THE ATLAS IN A TWO-YEAR-OLD COLT

V. BERWYN JONES, M.R.C.V.S.
Guildford, Surrey

Two months ago this thoroughbred colt suffered from a bad attack of strangles, with formation and spontaneous rupture of a submaxillary abscess. After recovery from the catarrhal symptoms the colt did not thrive. It was noticed to be stiff in the neck and would grunt with pain and groan on movement. Locomotion was inco-ordinated, the fore legs being swung about, the hind very "stilty" and the feet placed on the ground wide of the expected position.

A sharp push on the quarter would induce a stagger. The lumbar vertebræ were "roached." The colt could not feed from the ground and was hidebound. The sinuses appeared normal and the guttural pouches could not be palpated. No discharge had been observed from the nostrils. Tests for heavy worm infestation and for tuberculosis were negative.

On second examination it was observed that the atlas was displaced, the near wing being upwards and forwards. Reduction by forcible extension was successful with dramatic results.

After 13 days' confinement the colt could walk, trot and canter sound and true. He immediately started to feed with enormous appetite. The kyphosis was lessened. Passive movements of the head and neck in any direction did not produce pain or resistance. There remains some difficulty in grazing, which is accomplished by placing the forelegs widely; this may be partly due to stiffness of disuse and partly owing to a thick short neck.

Reference to surgical literature (*British Journal of Surgery*, Vol. xxi, No. 85, R. Watson Jones) shows that in man forward subluxation or dislocation of the atlas may arise spontaneously in similar conditions. It is attributed to hyperæmic decalcification of bone resulting from the spreading hyperæmia of an adjacent inflammatory focus. So marked may be the decalcification that the attachments of transverse ligaments are loosened and the anchorage of the odontoid to the atlas is impaired. The one factor common to all cases has been an infection sufficiently acute and near the atlas to give rise to hyperæmia but not necessarily to infection of the bone.

There is no doubt that there was some compression of the spinal cord, as evidenced by the locomotor ataxia.

I record this case not because of its successful conclusion, although this was gratifying, but because I do not remember a similar case ever having been recorded in veterinary literature.

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OPERATION FOR PARAPHIMOSIS IN THOROUGHBRED HORSE*

J. J. O'CONNOR, M.R.C.V.S.
Professor of Surgery, Royal Veterinary College of Ireland

The subject was a seven-years-old thoroughbred gelding in good condition.

History.—The horse had been at the stud until two years ago, when he was castrated. Numerous papillomata had been removed from the skin in various parts of the body, including the sheath.

Symptoms.—The penis was protruding for some time owing to a large swelling on the internal lateral aspect of the sheath, preventing withdrawal of the organ. The horse resented handling of the swelling, and it was only after casting that its nature could be made out.

Control.—The horse was cast with a sixty-foot cotton rope, with a loop round the breast and anterior half of the body, the knot being at the level of the loins. After casting, the hocks were completely flexed and kept in this position by passing the rope on each side round the gam and then hitching it on the pastern. The fore limbs were fixed by straps round the pasterns to the sides of the body loop. The advantages of this method of casting, especially for operations in the scrotal and inguinal regions, are:—

(*a*) The perfectly flexed and widely separated position of the hocks.

(*b*) The absence of pressure on the neck.

(*c*) The absolute impossibility of arching the back.

(*d*) The facility with which the bowling knot on the loop can be opened owing to the impossibility of its becoming jammed despite the great strain on it.

Chloroform was administered through a Cox's muzzle.

Procedure.—On examination of the penis and sheath, the swelling referred to was found to be about the size of a cocoanut and to have the consistence of a fibroma, but when it was incised it was seen to be composed of a solid mass of fibrin. The fibrin was removed and the interior of the cavity was swabbed with tincture of iodine. The bleeding was negligible. A few papillomata in the vicinity of the sheath were also removed.

* Demonstrated at a meeting of the Veterinary Medical Association of Ireland, Royal Veterinary College of Ireland, Dublin, May 2nd, 1934.

OPERATION FOR THE REMOVAL OF ANAL TUMOUR IN A FOXHOUND*

J. J. O'CONNOR, M.R.C.V.S.
Professor of Surgery, Royal Veterinary College of Ireland

The subject was an old foxhound, the leader of the Galway Blazers Pack.

History.—For some considerable time the dog had shown pain and difficulty in defæcating, crying out during the act. He had received repeated doses of castor oil to facilitate defæcation. During the process a red, bleeding swelling was everted. The condition was thought to be due to bleeding piles. The case was sent in by Mr. H. O'Leary.

Symptoms.—The symptoms were in accordance with the history. The dog resented digital examination of the anus, screaming when it was performed with the aid of liquid paraffin. The swelling occupied the left lateral and inferior aspect of the anus. It was of the nature of a granuloma, having the same appearance as the infective granuloma which affects the sheath and penis and vagina of the dog and bitch respectively. It was situated outside the mucous membrane, appearing to occupy a cavity corresponding to the position of the anal gland. It was about equal in size to a walnut.

Control.—Two hours previous to the operation the dog received a hypodermic injection of 2 grs. of morphia. He was fixed on the table with hobbles, and general anæsthesia was rapidly produced by ether and oxygen.

Procedure.—The tumour was dissected out cleanly and the remaining cavity was dressed with tincture of iodine. Recovery from the anæsthetic was rapid after the removal of the inhaler.

(Professor Kearney afterwards examined the tumour and found it to be a benign adenoma.)

* Demonstrated at a meeting of the Veterinary Medical Association of Ireland, Royal Veterinary College of Ireland, Dublin, May 2nd, 1934.

RESTORATION OF CIVIL SERVICE PAY CUTS

The Treasury has now issued a circular authorising Departments to restore, as from July 1st, in accordance with the announcement of the Chancellor of the Exchequer in his Budget statement on April 17th, one-half of the economy reductions made in the salaries of civil servants in the autumn of 1931. The Treasury urges that Departments should make every effort to meet the additional expenses involved without exceeding the totals of the existing Estimates for the year. In some cases, however, the Treasury recognises that this will not be possible, and is prepared in due course to ask Parliament to make the necessary additional grants.

Abstracts

[Malaria from the Zoological Point of View. Christophers, Sir Rickard. (1934.) *Proc. Roy. Soc. Med.* June. 27. 8. pp. 991-1000.]

"Man, along with many of the lower animals," says the eminent malariologist who was the author of this address delivered recently before the Comparative Section of the Royal Society of Medicine, "is subject to the invasion of his red blood corpuscles by certain parasitic protozoa. Infection with *Plasmodium* in man constitutes the important disease, malaria. Infection with *Piroplasmidæ* in cattle gives rise to some of the most important diseases dealt with by veterinary science. Other parasites of this kind are found in various domestic and wild animals, among which we may specially mention the parasites giving rise to monkey malaria.

"Except for a few peculiar forms, about the nature of which little is known, protozoan parasites of the red cells are all at present considered to fall in the Class Sporozoa, Subclass Coccidiomorpha. In other words, as suggested by Wenyon, 1926, for the Hæmosporidiidæ, they are coccidia which have taken to parasitism of the red cells of the blood instead of the more usual epithelial host cell favoured by these parasites. Judging by the accepted classification of the Sporozoa, this habit is one that has developed more than once in the course of evolution. In every case this habit is associated with, and has probably necessitated, the passing of a part of the life-cycle of the parasite in an intermediate invertebrate host.

"The three chief groups of red-cell parasitic sporozoa are, the Hæmogregarinidæ, the Hæmosporidiidæ and the Piroplasmidæ. In general, the Hæmogregarinidæ are commonest in the lower vertebrates, such as reptiles and fish, and have only been known relatively recently in mammals since Balfour, 1905, described a typical form in the jerboa. Of the two families of the Hæmosporidiidæ, the Hæmoproteidæ are very common in birds, but are known also in reptiles and the Plasmodidæ are perhaps more especially mammalian forms, though they are also common parasites of birds and a few forms seemingly of this type are known in lizards. The Piroplasmidæ are entirely mammalian.

"The genera occurring in mammals are: (in the Hæmogregarinidæ) *Hepatozoon*, including all the hæmogregarine-like forms attacking either the red cells or the leucocytes; (in the Piroplasmidæ) *Babesia* and *Theileria*; (in the Hæmosporidiidæ) *Plasmodium*.

"In the accompanying table, compiled from the list of mammalian hosts given by Wenyon, 1926, are given under the different mammalian orders, the number of species in which parasites of each of these kinds have been recorded.

	Hepatozoon	Babesia	Theileria	Plasmodium
Monotreme			1	
Marsupial	4			
Insectivora	1	3		2
Chiroptera		3		14
Primatia	2	2		26
Rodentia	29	14		5
Carnivora	6	11		2
Ungulata	2	30	3	2
Edentata		1		

The exact numbers should not be given too much weight, but the table gives a good general idea of the distribution of these parasitic forms in the different mammalian stems. In marsupials, so far only *Hepatozoon* has been described, though a *Theileria* is recorded in the Monotreme *Echidna*. Possibly, however, the number of marsupials examined has not been very great. Among the placentate mammals *Hepatozoon* occurs most noticeably in the Rodents and also in the Carnivora. *Babesia* (with *Thieleria*) is almost the only form occurring in Ungulates, though at least two Plasmodia and two Hepatozoa appear to be authentically recorded in this order. Carnivora and also Rodents rather frequently show *Babesia*-like parasites, as also the Insectivora and Chiroptera. The Bats and especially the Primates are very noticeable for the frequency with which they show *Plasmodium*.

"The very early mammals were of aplacentate or marsupial type. The placentate orders are known from the Eocene (Zittel, 1925). The most primitive of the early prototypes were the Primitive Insectivors from which are derived the existing Insectivors, the Bats, Primates and Rodents. The Carnivora arose from the Creodontia, a primitive carnivorous type, now extinct, having affinities with the Primitive Insectivors. The Ungulates are derived from another primitive stem, the Condylarthra, which had affinities with the Creodonts and in some cases with the Rodentia. In general, stems much as at present existed throughout the tertiary, some, however, becoming extinct.

"It is possible perhaps to regard these derivations as giving some explanation of the relative prevalence of type of parasite. Thus one might explain the occurrence of *Babesia* in both Ungulates and Carnivora as due to both these stems arising from creodont ancestors, whilst *Plasmodium* in Bats and Primates might be ascribed to the common insectivor ancestry of these orders. It cannot be said that such explanations are very convincing. A more likely line of approach is suggested if we consider the intermediate invertebrate hosts with which stems are likely to be more especially associated.

"The Ungulates and Carnivora are notably tick carriers. The vast droves of game, which we may visualise as occurring when the ungulates with their attendant carnivors were undergoing evolution, would lead to a life in the main remote from water, probably in steppe- or park-like country. Under such conditions the maximum facilities are likely to be given for the evolution of parasites based on the tick as intermediate host. Birds, bats and monkeys tend to live among trees, in wooded and even forest country and would be more brought into contact with mosquitoes. Allowing that plasmodial parasites once specialised to a particular mammalian stem would tend to be restricted to this stem, the idea that evolution of parasitic forms was from the intermediate host seems to be most in keeping with the known facts. It also receives support from the consideration sometimes pointed out that it is usually the sexual stage which is passed in the invertebrate host. From this point of view, then, we may regard man as continuing to harbour parasites of his red cells which were acquired at some remote period when his ancestors or precursors, ape, monkey, lemur or primitive insectivor, lived in close association with anopheles, probably in the forest. It remains to be seen whether we can glean anything from what is known of plasmodial forms in the primate stem as to the probable source from which the parasites of man came. The data we possess suggests that it was much more likely to be from some part of the primate stem than any casual picking up of a parasite from outside this stem.

"Knowledge of the plasmodial parasites of monkeys has up to recently been very meagre, but from the work of Sinton and Mulligan it appears certain that in the main distinct parasites occur respectively in the Oriental and Ethiopian regions, just as the genera of monkeys under present nomenclature are mainly confined to one or other of these zoo-geographical realms. *P. brasilianum* occurring in the Neotropical monkeys is a distinct parasite from any Old World form. None of the monkey parasites are probably really very close to those of man.

"The apes evolved as part of a great Pliocene fauna, and their remains occur in Europe, Egypt and India. The progenitors even of the present-day African forms are found in the Indian deposits. In the gorilla and chimpanzee, forms of plasmodium, so far described, appear to be very similar to those of man, including the characteristic crescent forms.

"In the main the races of men are essentially Pleistocene and Palæarctic. They none of them form true Neotropical, Australasian or Oriental man in the zoological sense, but it is less certain there is not a relationship in the case of the Ethiopian region. The parasites of malaria in any case do not show any apparent relationship to the usual zoogeographical realms, and their distribution and prevalence appear to be determined on quite other grounds than those normal to zoological distributions. *P. vivax* occurs

almost throughout the world within the July and January isotherms of 60°. *P. falciparum* is limited by the isotherms of 70°. Quartan is believed by Knowles and Senior White to have a peculiar geographical distribution. Frequency of occurrence is, however, entirely different from distribution, and this parasite probably also has its distribution determined by factors other than those usually concerned in the distribution of animal forms of life. Among other features it appears to be associated with areas of severe endemicity, and becomes conspicuous when transmission is temporarily in abeyance. Mer has recently shown that it has a very slow development in the mosquito, and this may explain some of its peculiarities.

"The parasites *P. tenue* and *P. ovale* are so far recorded only from India and East Africa respectively. Observations regarding the occurrence of these forms are much needed."

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[**The Lesions Found in Cases of Roaring—Some Further Notes.** Argyle, E. P. *Jour. R.A.V.C.* V. 3. 103-109.]

In a previous article (*Jour. R.A.V.C.*, August, 1933) the author described lesions he had observed in the left recurrent laryngeal nerve and alterations in the larynx in "roarers." The present article deals with observations in four more cases of this condition and in addition certain microscopic abnormalities detected in the *medulla oblongata* in two of these cases. A series of sections of the nucleus of the vagus nerve of a normal horse was compared with two similar series from "roarers." In the latter there was a marked degeneration of the nerve cells characterised by reduction in size of the cell body, an eccentric nucleus, poor staining, and degeneration of the Nissl granules. (These changes are illustrated by four photomicrographs.) In the two cases examined the changes were practically confined to a proportion of the cells of the nucleus on the left side, but further work is necessary to determine the significance of this fact.

The left recurrent laryngeal nerve was examined histologically in all four cases. Here the change consisted of irregularity and displacement of the bundles, due partly to excessive deposition of fat and partly to increase of fibrous tissue, together with centres of atrophy and degeneration of the axis cylinders (illustrated by three photomicrographs). In one case this degeneration was found to a slight extent at the bifurcation of the nerve from the vagus, which suggests the possibility that some of the fibres of the vagus itself may have been affected.

With regard to the ætiology of roaring, the commonly held theory is that the degeneration of the left recurrent laryngeal nerve is due in some way to its course within the thorax. This is based upon the possibility of the nerve becoming compressed between the aorta and the trachea, or becoming involved in inflammation of the bronchial glands. Many more facts, however, are required to support this theory and the author has tabulated the following clinical data as being of considerable importance in this connection:—the frequency of roaring after respiratory disease; the tendency for pneumonia in the horse to be accompanied by profuse pleurisy; the tendency towards the formation of permanent cicatricial pleural adhesions following fibrinous exudation; the cribriform nature of the posterior mediastinum in the horse allowing inflammatory fluid to pass from one side to the other; the pressure exerted by inflammatory fluid on the great vessels in the thorax; and lastly the wild and disordered action of the heart in pneumonia and pleurisy. From these clinical facts two further hypotheses as to the cause of the nerve lesions may be made. A backward displacement of the heart by pressure of exudate and abnormally strong and irregular action of the respiratory muscles may result in distortion of the nerve with possible permanent injury: or involvement of the nerve in fibrinous exudate may result later in traction and stretching of it by the consequent contraction of cicatricial tissue. Moreover, the violently acting heart would be pounding on the nerve which, in its damaged state, would be fully exposed to the action of any poison present in the pleural exudate or circulating throughout the body generally.

It is in connection with these factors as possible primary causes of "roaring" that the clinician can add to our knowledge. At every *post-mortem* examination on a case of this nature (*e.g.*, pneumonia and pleurisy) the left recurrent laryngeal nerve and the surrounding structures should be carefully examined in order to detect any possible involvement of it resulting in mechanical or other injury. With regard to observations on the living animal, the author looks upon the use of the fluorescent screen (which he has seen demonstrated) as the next objective, for observing the movements within the thorax. The use of the rhino-laryngoscope for examining the larynx is recommended in differentiating between various diseases in this region, and although perseverance and time are necessary to master its use, such mastery would be rewarded by an increased understanding of roaring, the military urgency of which should be an incentive for further efforts towards its solution.

A. B. O.

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[**A Modified Method of Applying the Mallein Test.** Beller, K., and Tansin, S. (1934.) *Berliner Tierärztliche Wochenschrift.* March 23. *50.* 191.]

The preparation and the efficacy of a solid preparation of mallein made up in tablet form for the diagnosis of glanders is described.

The authors based their work upon the experiments of Gaggermeier and Beller in America and Canada respectively, who prepared a tabloid tuberculin for use in the ophthalmic test. To fluid mallein alcohol is added and the resulting precipitate filtered off. The latter is evaporated, forming an amorphous powder. This is ground to a fine state in a mortar, mixed intimately with lactose in the proportion of one part precipitate to 50 parts of sugar, moistened with a sufficient quantity of glycerin and pressed into tablet form. Each tablet weighs 0.05 grams and contains 0.001 grams of the precipitated mallein.

This work was prompted chiefly by the exceedingly difficult conditions which still exist in certain countries, Turkey being instanced, where transport is poor, delivery very precarious, storage conditions variable and public veterinarians sparse. The employment of a solid form of mallein avoids all the above difficulties to which the use of liquid mallein is exposed. The test is also sufficiently simple and rapid to enable the general practitioners, who do not ordinarily carry out the test in Turkey, to do so. As the native population of the eastern area is nomadic it is important that supplies of the diagnostic agent shall be readily available, together with someone who can carry out the test and that the result can be read with a minimum of delay.

The tablet is inserted into the inner canthus of the eye by means of forceps, a glass rod made sticky with lanolin or with a clean finger. It dissolves readily, disappearing in 30 to 60 seconds and causing no irritation or lacrimation as is frequently the case in the intrapalpebral test or when fluid mallein is dropped in. There is the added advantage that the dose is always the same.

Controlled experiments were carried out with the tablet form and the fluid form of mallein. Whereas the fluid mallein produced a reaction at the third hour in one case only, the other 17 cases developing at the sixth hour, with the tablet a positive inflammatory reaction occurred in every case at the third hour.

The authors advise that each batch of tablets shall be tested out on a glanders-infected horse before being issued for general use.

N. S. B.

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[The Therapeutics of Tapeworms and Stomach Worms in Lambs. Vaida, T. (1929). *Jl. of Comp. Phys. and Path.* Budapest. 23. 4.]

A translation of this article has been sent to the Editor of *The Veterinary Record* by a firm of manufacturing chemists, with the suggestion that the matter contained therein might be of value in connection with the outbreaks of parasitic gastritis in sheep which have been so frequent in this country during the last few months.

The article deals principally with the value of copper methylarsenite, marketed under the name of "Monekil," for the expulsion of tapeworms of the genus *Moniezia,* and round worms of the species *Hæmonchus contortus* (the twisted wireworm) from sheep.

The effect of the drug upon species of *Ostertagia* (the lesser stomach worm) is apparently less dependable.

Filicin mixed with kamala, amorphous filicic acid and arecoline hydrobromide were also tried for the expulsion of *Moniezia* (these parasites, according to the author, cause symptoms similar to those of parasitic gastritis). These drugs were, however, either too drastic or too inefficient, and compared unfavourably with the copper methylarsenite. Reference is made to severe losses which have occurred when copper sulphate and sodium arsenite have been used but copper methylarsenite (Monekil) was found to be safe, twice the anthelmintic dose producing little or no untoward effect upon the sheep.

[The original paper is, unfortunately, not accessible to the abstractor and it would therefore be unfair to criticise Vaida's work from this translation, which, however, presents several minor errors and omissions. Wood (1932), according to a paper published in the Report of the Director, Inst. of Anim. Path. Camb., Second Report, found Monekil to be effective in expelling the smaller trichostrongyles as well as the twisted wireworm.]

E. L. T.

Review

[Horse Owner's Guide (Part 2). Issued by the National Horse Association of Great Britain, 12, Hanover Square, London, W.1. Price 6d. Post 7d.]

Mr. Nigel C. Colman, M.P., in his Presidential preface to the second part of the Horse Owner's Guide, now issued, comments on the keen interest that the National Horse Association is taking in the recent revival of horse riding. This useful 6d. publication contains an article on "The Rights and Privileges of Horse Riders with regard to Highways, Bridle Tracks, Grass Margins, etc.," which should prove invaluable to all who ride. The position at the moment is very fully covered by Mr. Christopher Powell.

The remainder of the Guide contains a summary of the most popular and generally successful gymkhana events, and should prove of value to the many who are now organising gymkhanas. The standardisation of rules for gymkhana competitions is undoubtedly to be encouraged. Major H. Faudel Phillips, in his short article, gives practical advice which gymkhana officials might well study.

Reports

SOUTHERN RHODESIA

I.—Veterinary Department, 1933

The report commences, as in the case of so many recent ones, with a reference to the loss occasioned by the retirement of the head of the department. Mr. J. M. Sinclair has been responsible for the control of veterinary matters in Southern Rhodesia for 28 years, during which period he has had to deal with severe and continued outbreaks of pleuro-pneumonia, rinderpest, African Coast fever, and foot-and-mouth disease. That the territory was free from these diseases at the time of his retirement is a tribute to the work he carried out.

The staff now consists of 11 veterinary officers and 44 cattle inspectors, six of whom are entirely employed in the inspection of carcases for export overseas. The work of the staff has been rendered peculiarly difficult, during the year, by reason of a variety of causes, any one of which was sufficient to bring anxiety. Regulations imposed by neighbouring territories had caused the sale and export of stock to become negligible and many areas were overstocked. Then came a season of exceptionally low rainfall which resulted in insufficient grazing. Then followed an invasion of locusts, in one area, which destroyed such grazing as had survived the drought. It says much for the vigilance of the staff that, in spite of a mortality of 20 per cent. in one district and deaths totalling 27,000 in another, no widespread outbreak of disease occurred. Indeed, foot-and-mouth disease, which has been of such grave importance to the cattle industry, was eradicated. Existing as it does in neighbouring countries, efforts are being maintained to prevent its reintroduction. East Coast fever, too, has been removed from the east district in which it lingered. Working in liaison with a committee of farmers, the staff carried out such intensive measures as resulted in the success of a campaign which has extended over many years.

Details of the diseases which are of minor importance show that the maintenance of preventive and control measures is continuing to decrease both incidence and mortality. The inspection of carcases at the abattoir has revealed the presence of tuberculosis. Like other African territories, it had been thought that Southern Rhodesia was free from this disease but, as in others, this world-wide problem has now to be faced.

When a report contains information that, during one year, two such diseases as foot-and-mouth and African Coast fever have been eliminated, it would be unfair not to give to each member of the staff that measure of praise to which he is entitled. It is hoped that the territory will realise the debt it owes to the Veterinary Department.

J. S.

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II.—Director of Veterinary Research, 1933

This department, now under the control of Mr. D. A. Lawrence who succeeded Mr. Bevan on the latter's retirement, is to be commended upon getting its report into general circulation at a comparatively early date, thus making available to those most interested information which may be of advantage.

Owing to the fact that, for four months of the period under review, the Director was the only research officer on the staff, it is not surprising that little other than general administrative and routine work could be carried out. This consists in the preparation and distribution of various vaccines and the examination of smears. The advent of an assistant allowed a programme of a more experimental nature to be initiated.

An experiment was carried out to ascertain the benefits of certain treatments upon cattle, already infected with trypanosomiasis, kept upon a farm where further infection was probable. No indication is given of the treatments used. Another experiment is of considerable interest in view of the continued invasion of certain parts of Africa with locusts. One of the means of meeting this menace is by spraying young locusts whilst they are still on the ground in the "hopper" stage with a solution of arsenic. One animal, grazed on a sprayed plot, early showed signs of intestinal disorder and refused to eat thereafter until suitable rations were supplied. A second animal grazed for one day only and died 100 hours later. The most interesting general conclusion, drawn from the whole series of experiments, is that the chemists who carried out the analyses found that the most consistent results were obtained when working with the omasum and kidney and not with the abomasal contents.

The research department of Southern Rhodesia is quite separate from the veterinary department and it is somewhat unusual to find that in only one experiment is it stated that there was collaboration with the Chief Veterinary Surgeon and district officers. The presumption is that in this particular work only was assistance requested. It is justifiable to criticise by saying that experiments which have been commenced, and which require careful observation in the field, may be jeopardised unless that observation is carried out by those most competent to do so. If, on the other hand, there has been complete liaison, between the two staffs, in all the work undertaken, that fact should have been acknowledged.

J. S.

QUARTERLY MEETING OF COUNCIL, N.V.M.A.

Summary of Proceedings

The first item of moment in the proceedings of the July meeting of Council N.V.M.A. (a full account of which will be published next week) was the evidence furnished by a letter from the Mid-West and South Wales Division that this old-established society views with entire approval the very sensible provision of a separate Division for South Wales. There is, indeed, no ground for supposing that the restriction of its area within a more reasonable and convenient geographical boundary will render the Mid-West Division subject to a membership curtailment at all comparable in degree to that which has deprived it of the doubtful distinction of possessing the longest Divisional title.

Elections to membership brought an unwelcome departure from the customary unanimity of acceptance, wherein formality is pleasantly coloured with enthusiasm. The Council had occasion to determine that the limits of charitableness had been reached in regard to those who accept appointments upon which the ban of the Association has been placed on the ground of the inadequacy of the salary offered. It took advantage of the unhappy occasion to strengthen its position by recording an intimation that, as far as its own members are concerned, any who strike in this manner at the ideal of unity for economic betterment, which it is one of the purposes of the Association to serve, will do so in future at the risk of incurring the obloquy and other consequences which may follow upon the inevitable reporting of their case to Council.

The consideration of this distasteful matter involved some encroachment upon the sphere of Committee reports, and the Council turned with relief to something to applaud in the announcement that the representations made to the Borough of Wallasey had resulted in a very considerable increase in the salary offered in connection with the post of Chief Veterinary Officer of that Borough.

As to the vexed general question of scales of salary for whole-time appointments, no alteration is to be made in those at present in force, but copies of the scales are to be sent to Local Authorities and, in regard to banned appointments, a sorely-needed executive committee is to be set up to determine the action—invariably urgent—to be taken.

With the centralised and decentralised schemes of treatment for the sick animals of poor persons well under weigh in co-operation with the R.S.P.C.A., it was reassuring to hear of the projected early issue to all branches of that body, of a document designed to eliminate the difficulties inherent in the progress of this important venture from the experimental to the established stage.

Council having acceded to the request of the Editorial Committee that, as it were, official recognition should be accorded their powers—hitherto somewhat tentatively used—of dealing, as required, with material received for publication from Divisions, the meeting, again with some sense of relief, passed to the pleasure of applauding the success of Professor Wright in securing the first award made of the Dalrymple-Champneys Prize. With this author's masterly paper on "Some Aspects of Canine Obstetrics" fresh in mind, readers of this journal will readily endorse the selection.

Prolonged consideration was given to the report presented by the Association's committee entrusted with the formidable task of examining the report of the Cattle Diseases Committee of the Economic Advisory Council. It was ultimately decided to request the Ministry of Agriculture to receive a deputation to discuss how the present veterinary services of the country can best be utilised for carrying out the recommendations made by the Cattle Diseases Committee. Council also authorised approach being made to the Ministry of Health and the Milk Marketing Board, with the same end in view.

Great enthusiasm accompanied the decision to honour, during the course of the Edinburgh Congress, two of those who were prominent in the pioneer work of forming and re-forming, respectively, the National Veterinary Medical Association. Mr. George F. Banham will still be remembered by many, and is soon to be known by all, as the first Secretary of the Association, fifty years ago, while Mr. Arthur Gofton's name will ever be associated, with profound gratitude, with the reconstruction of the "National" in 1925.

Errata: *Newly-elected President R.C.V.S.*—It is regretted that in the note appearing on pages 809-810 of our last issue, announcing the election of Mr. George Harry Locke as President of Council, Royal College of Veterinary Surgeons, for the ensuing year, it was erroneously stated that Mr. Locke is at the present time President of the Lancashire V.M.A., whereas he is a past President of the L.V.M.A.

It should also be noted that the names of Mr. John Lawson and his son Alexander were omitted from the instances given in which the son, in due course, followed the father in the Presidential chair, while Principal Williams was ultimately followed by Professor William Owen Williams and not by William Field, as recorded.

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"Remarks on Heart Disease in the Horse."—In the ninth question addressed by Professor Macqueen to the essayist (Professor McCunn), page 791, col. 1, for "reflex" read "reflux" (of blood from the auricles).

N.V.M.A. Divisional Reports

WEST OF SCOTLAND V.M.A.*

President's Address at Glasgow

A meeting of the above Division was held in the Grand Hotel, Charing Cross, Glasgow, on Wednesday, May 16th.

The President, Mr. Jas. McFarlane, occupied the chair, and the following members were present: Professor G. W. Weir, Professor Wm. Robb, Messrs. D. Campbell, W. Anderson, W. H. Brodie, W. Watt, David Brown, J. F. Taylor, R. M. Smith and the Hon. Secretary (A. Thomson).

The minutes of the last meeting, having been printed in *The Veterinary Record*, were taken as having been read, and were adopted.

Obituary.—Arising out of the correspondence, the receipt of two letters of thanks was intimated, one from Mrs. Pottie (Greenock) and one from Mrs. McAlister (Kirkudbright). In reference to them, the President said that the Secretary had, on his behalf, and on behalf of the Division, sent letters of sympathy. He would like to say a few words in appreciation of both deceased. Mr. Pottie had been an old member of the Division and had been a fairly regular attender until recently, and all would regret his passing.

His association with Mr. McAlister went back to college days—he and Professor Weir had qualified with him the same day, and had maintained friendship since. It came as a great shock to him to learn of the sudden manner of Mr. McAlister"s death. He had been interested in his profession, and had carried its traditions forward; he had been held in high esteem in Kirkudbright, where he had held the office of Provost for three terms. Although Mr. McAlister was not, at his death, a member of the Division he had been so at one time, when he was in practice in Johnstone, and he (the President) felt that the personal relationship was sufficiently strong to warrant reference being made to his memory.

Professor Weir spoke of the personal friendship he had for Mr. McAlister since college days, and would ask that reference be made in the Minutes to their appreciation of his memory.

Mr. David Brown seconded this sentiment, which was endorsed by all present.

Proceeding, Mr. Brown informed the meeting of the death of a much respected and well-known practitioner in Mr. D. C. Smith, of New Cumnock. Mr. Smith (said the speaker) had been at one time a member of the Division until the formation of the Ayrshire Division, and he was indeed recognised as "one of Nature's gentlemen." The Secretary was instructed to write to the widow conveying the sympathy of the members.

It was agreed to subscribe £3 3s. to the R.C.V.S. Library Fund.

It was also decided that the Division, in the name of its Secretary, become a member of the 12th International Congress and that the subscription of £1 1s. be sent.

Scottish Branch Executive.—A short report of the work of the Scottish Branch Executive was given by Mr. Donald Campbell, and the members voiced their thanks for the work being done on behalf of the profession.

Resolution.—Arising out of the discussion on the proposed grant to Public Health by the Ministry of Agriculture, the following resolution was passed, to be forwarded to Council N.V.M.A.: "In view of the grant of £750,000 promised by the Ministry of Agriculture, this Division would ask the Council N.V.M.A. to make representation that the local practitioners be nominated to co-operate in any scheme or schemes to be carried out under this grant. That the representation be especially made to the Ministry of Agriculture, the Department of Health for Scotland, and the Convention of Royal Burghs for Scotland, and any other bodies they think necessary."

The members then retired for tea. On resuming, the President gave his Inaugural Address, which was heard with appreciation.

Presidential Address

I wish to thank you all most heartily for the great honour you have conferred on me in electing me as your President.

I have very pleasant recollections of my last term of office, but I believe that if it is possible, I am entitled to be more proud to-day than I was on the last occasion, because then we were practically a separate society of Glasgow and West of Scotland veterinary surgeons: now we are an integral part of a great organisation which is growing both in numerical strength and in usefulness year by year, namely, the National Veterinary Medical Association of Great Britain and Ireland—an association of which every member of the Royal College of Veterinary Surgeons should be justly proud. We own a weekly publication, have numerous divisions throughout Great Britain and Ireland and in many of our colonies, possess an influential Council, with six standing Committees, and run an "Annual Congress" of a week's duration. At this we have scientific discus-

* Received for publication June 9th.

sions on various veterinary problems, and here it is that the laboratory worker (the bacteriologist and the pathologist) meets with the ordinary practitioner (the man in the field), our professors from our colleges, and our Government officials (both attached to the Ministry of Agriculture and the Army), as well as the whole-time county officials. The social side is also fostered during the Congress, and, thanks to our "National," we are much better known to each other now than we have been in the past and so are living more and more up to the motto selected by the pioneers of the Royal College of Veterinary Surgeons—"*Vis Unita Fortior.*"

If you will allow me, I will become reminiscent, but first of all I wish to state that I have always been a keen supporter of, and have cherished a great admiration for, the work of the general practitioner.

I remember the agitation and work involved in obtaining the appointment of whole-time veterinary officers and the endeavour that had to be made to secure for them a standing equivalent to that enjoyed by the medical officer of health and that they should not be entirely subservient to him. Next came the appointment of many whole-time veterinary research workers attached to public and private laboratories investigating animal diseases and diseases communicable to man. We only got into this branch of veterinary work just in time, as it was threatening to become a monopoly of our sister profession. Great credit is due to the veterinary surgeons who obtained these situations and filled and held them so capably.

In the past 30 years the status, qualifications and remuneration of the professors in our colleges have greatly increased.

Now, what can be said about the general practitioner, or, in other words, the rank and file of the profession? Carriage horses have entirely disappeared and light delivery van horses have practically been superseded by motor vans. Heavy horses have held their own remarkably well up till now, but the rapid development of heavy traffic by road transport (especially of traffic which, if properly rated, should normally and economically go by rail) is telling a tale. Will the provisions of the new Road Traffic Act prove a deterrent? Besides losing a great deal of horse practice, owing to the appointment of more whole-time county inspectors the general practitioner is slowly having all his part-time inspection work taken away from him. Owing to depression in agriculture, the extension of veterinary teaching by agricultural colleges and the appointment of whole-time veterinary advisory officers, country practice is slowly dwindling away. The one bright spot is the development of small animal practice.

With the Government introducing and organising marketing schemes, quotas and import duties to help agriculture, could they be induced to come to our aid and organise our profession or introduce a panel system, so that we would be free to give the country the full benefit of our skill not only in the treatment of disease but by the systematic inspection and testing of all live stock, giving advice on breeding, dietetics and hygiene—so preventing disease and increasing the value and profit derived from all classes of live stock?

I believe such proposals would be highly economical to the country, and would have the approval of all humanitarians, including our societies for the prevention of cruelty to animals. If proper guarantees were given this could prevent overlapping of work, while it would also be good for us financially. You may ask, How can it be done? Put a levy on all live stock for veterinary services—in the case of horses at so much per head and on all farm animals either on rental or the head of stock carried. A slight increase could be made on dog licences and exemptions withdrawn. A small new tax could be introduced to be levied on all cats, which would at least be a benefit in curtailing the number kept in certain households and premises.

As I see it, there would still require to be a chief veterinary officer to organise and revise the work done in each county. Each veterinary surgeon would be put to the work best suited to him, and all would be out to improve the health and quality of our livestock. Infectious and contagious disease would be promptly detected and immediate steps taken to deal with it. Breeding from scrub stock would cease. Periodic inspection would prevent a lot of abuse and malpractice to which many animals are at present subject. I would urge you, therefore, to think it over.

Demonstration.—Professor Weir was then called upon to give a demonstration of surgical horse shoes. The collection of shoes was of a very complete character, and their various uses and the theory underlying their construction was briefly but clearly explained. A general discussion followed, in which most of the members took part. Owing to the lateness of the hour there was no time to discuss any cases of interest, and it was agreed to defer these to a subsequent meeting.

The meeting then terminated with votes of thanks to Professor Weir, and to the President for his conduct in the chair.

A. Thomson, *Hon. Secretary.*

SOUTH WALES VETERINARY SOCIETY*

Meeting at Carmarthen

The first meeting of the newly-formed Society was held at the Pibwrlwyd Farm Institute, Carmarthen, on Friday, June 8th, 1934. This meeting was a sequel to a resolution passed on April 27th, 1934, at a meeting of members from South Wales, when it was decided to form a new division, preferably to be known as the "South Wales Veterinary Division."

The members met at the Institute at 3 p.m. and made an inspection of the garden, dairy and poultry department. The party was then given an enjoyable tea at the Institute by the President, after which an inspection of the farm stock and buildings was made.

The meeting was afterwards held in the Lecture Room, the Chair being occupied by the President, Mr. J. Campbell Hill, supported by Mr. A. J. S. Reynolds (Hon. Treasurer) and Mr. T. Roger Thomas (Hon. Secretary) and Messrs. W. D. John, D. E. Davies, A. F. Good, Brin Sayer, Charles Watson, D. H. Thomas, A. Parry, W. Davies, H. L. Gravelle, D. J. Anthony, D. E. Pugh, T. H. Jones. J. Howard Jones, W. D. Rees, G. H. Thomas, J. F. Rees, D. G. Davies, R. Moore, Lt.-Colonel P. J. Simpson. Messrs. J. L. Lloyd, A. D. Thomas, and I. H. Malcolm were present as visitors.

The Minutes of the preliminary meeting having been circulated to all the veterinary surgeons in the area and also printed in *The Veterinary Record*, were taken as read, and were approved on the recommendation of the President, seconded by Mr. A. J. S. Reynolds.

Apologies for absence were received from Professor S. H. Gaiger, Mr. William Nairn, Mr. L. B. A. Grace, Mr. B. Howells, Mr. J. E. Thomas, and Mr. W. R. Williams.

The Hon. Secretary was instructed to convey the sympathy of the members to Professor S. H. Gaiger in his recent illness; also to communicate with the N.V.M.A. regarding affiliation.

A letter was received from the Mid.-West and South Wales Division congratulating the new Division on their venture and stating their willingness to alter their title to "The Mid.-West Division."

On the recommendation of the President, seconded by Mr. W. D. John, the name of the Division was decided upon as "The South Wales Division."

It was then agreed that a joint meeting of the two Divisions should be held at Cardiff in October.

It was also decided to draw up byelaws similar to those of the other Divisions, with alterations where required to suit the Division.

* Received for publication June 29th.

PRESIDENT'S ADDRESS

Mr. J. Campbell Hill, in the course of his remarks, said: "I hope that this new Association will create a spirit of fraternity between all the members. It should make them a unity, a concrete body, to be a member of which will necessarily bring obligations in its train. Each member will now have to think of the other members, and not solely of himself. But this unity should also help us. If we meet with any difficulty we should not be afraid to seek the advice of another member and no member should refuse to help another member. That spirit of fellowship should help us to shed our own shells and be as free with one another as we are with our clients when no other member of the profession is present. There should be no encroaching on another man's practice.

"We await the Government's proposals with regard to the production of clean milk, free from disease. The Minister of Agriculture, Major Elliot, a medical man and a Scotsman, has already spoken of 'cleaning up the herds' and 'making the farmers run after the veterinary surgeons.' The Cattle Diseases Committee, in their report, recently issued, gave it as their opinion that 300 veterinary surgeons would be required for this work together with another 100 for tuberculin testing, and this opinion has been officially voiced in the House of Commons. This work is supposed to start not later than October next and it is hoped that both the Royal College and the 'National' will do their part in 'lobbying' at the Houses of Parliament.

"If eradication is the intention of the Government and the Milk Marketing Board and if the inspection is to be of any real value and accomplish the avowed aim of producing a milk supply free from disease, then 300 veterinary surgeons are totally inadequate—it will, in my opinion, require from 1,000 to 1,200 men.

"It is our intention to make this branch a working unit, not a talking one. We desire everyone to bring interesting cases and specimens with accurate notes of observed facts. Do not theorise, but state facts; include your *post-mortem* cases and never miss making a *post-mortem* if this is at all possible." Continuing, Mr. Hill said that before the end of the year, he hoped to get an expert surgeon down, to conduct before the meeting some of the operations that he was sure they were all keen to witness.

Concluding his address, he thanked them for electing him President and said that he hoped that they would all attend every future meeting.

The President than called upon Colonel Simpson to address the Meeting.

Lt.-Colonel P. J. Simpson thanked the meeting for inviting him to be present and said he had thoroughly enjoyed his visit. When he had visited Carmarthen before, he had seen by the keenness that there was even at that time

amongst those members of the profession present, a splendid nucleus for a new Division.

He, like the President, thought that big things were going to happen in their profession in the future. He thought that it would be their problem in the near future to look into all cases of diseases of all animals, with special reference to poultry diseases and those of fur-bearing animals, etc.

He hoped that the members would procure a collecting box, to be passed round after every meeting in aid of the Victoria Veterinary Benevolent Fund.

The following also spoke:—Messrs. D. J. Anthony, A. F. Good, J. F. Rees and W. D. Rees.

Mr. D. G. Davies was then elected to represent the Division on the N.V.M.A. Council.

It was decided to procure a collecting box for the Victoria Veterinary Benevolent Fund.

Nominations.—The following were nominated as members:—Mr. I. H. Stewart (Proposer, Mr. J. F. Rees, seconder, Mr. W. D. Rees); Mr. A. F. Good (Proposer, Mr. A. J. S. Reynolds, seconder, Mr. Sayer); Mr. D. J. Anthony (Proposer, the Hon. Secretary, seconder, Mr. H. L. Gravelle); Mr. D. E. Davies (Proposer, Mr. R. Moore, seconder, Mr. W. D. Rees).

Mr. R. Moore proposed a hearty vote of thanks to the Principal and Staff of the Institute, and on the proposition of Mr. D. Gladstone Davies a similar tribute was paid to the President for his conduct in the Chair.

The Principal (Mr. J. L. Lloyd) briefly responded.

T. Roger Thomas, *Hon.Secretary.*

* * * * *

VETERINARY MEDICAL ASSOCIATION OF IRELAND

Demonstrations at Dublin

A general meeting of the Veterinary Medical Association of Ireland was held in the Veterinary College, Dublin, on Wednesday, May 2nd, 1934.

The meeting was in two parts, *viz.*,

1. Practical Demonstrations.
2. Ordinary Meeting.

The following members were present at the Demonstrations: Messrs. S. R. J. Cussen, P. F. Dolan, F. S. Ringwood, R. J. Nolan, F. Daly, A. F. O'Dea, A. Donnelly, D. O'Reilly, J. P. Nowlan, J. F. Timoney, F. A. Heney, M. J. MacClancy, S. Conway, J. M. Murphy, C. M. Griffin, N. Walsh, Sean O'Donovan, D. Reeves, V. E. Stack, J. Lynch, J. J. Lyons, J. H. Norris, W. P. Power, J. J. Brennan, J. H. Carr, P. J. Howard, N. H. Lambert, J. Crowe, A. J. Macdonald, L. Magee, G. T. O'Reilly, J. D. Whitty, E. W. Little, F. O'Leary, C. J. C. Ryan, Major DeVine, Professor J. F. Craig, T. G. Browne, Wm. Kearney, J. J. O'Connor (Hon. Secretary), Mrs. K. M. Lowndes and Miss H. Bisset. Messrs. J. M. Craigie, B. Tonle, J. R. Knox (Gascoignes, Ltd.) were visitors.

An apology for inability to attend was received from Mr. J. W. Nolans, Birr.

The following members also attended the Ordinary Meeting: Messrs. P. F. Dolan, A. F. O'Dea, F. Daly, M. J. MacClancy, C. M. Griffin, Sean O'Donovan, J. M. Murphy, N. H. Lambert, J. Crowe, Professor Browne, Professor Craig and Professor O'Connor.

1. DEMONSTRATIONS

(1) Examination of Stomach Contents for Parasites

By Professor J. F. Craig, M.A., M.R.C.V.S.

The subject, a black yearling heifer, was one of a number of young cattle which had been showing symptoms of chronic wasting, anæmia and diarrhœa. The case was one of parasitic gastritis due to *Ostertagia ostertagi*. The strongyle eggs were demonstrated in the droppings by means of Sheather's flotation method.

(2) Euthanasia

(Also by Professor Craig)

The subject, a mongrel terrier dog, 24 lbs. in weight, was given 12 grains evipan sodium in solution by injection into the saphena vein. The dog was rendered completely unconscious immediately after the injection without any preliminary cry or struggle and the respirations were temporarily suspended. Death supervened in two minutes without a return of consciousness when 20 c.cs. of chloroform were administered by intranasal injection.

(3) The Application of the Intradermal Tuberculin Test

By Mr. F. J. Daly, M.R.C.V.S., Swords, Co. Dublin

In giving this demonstration Mr. Daly said: "I will take first the instruments, etc., required for carrying out the test.

"These are:—

(i) A suitable syringe with spare needles.
(ii) Cotton wool.
(iii) Calipers for measuring the thickness of the fold of skin.
(iv) Some sterilised water.
(v) A flash lamp which can be fixed on the operator's head by means of an elastic band so that the light can be focussed on the point of injection.
(vi) A suitable book for recording the test.
(vii) Tuberculin. This must be concentrated tuberculin.

"The sites for injection are:—

(i) The caudal fold.
(ii) The side of the neck about midway between the posterior angle of the jaw and the shoulder.

"The injection should be made into the deeper layers of the skin. No disinfectant should be used, but the site of injection may be washed with sterilised water.

"The test is carried out in two steps:—

(*a*) The hair is clipped, the fold of skin is measured and the first injection of tuberculin is given.

(*b*) Forty-eight hours after the first injection the fold of skin is measured and the second injection of tuberculin is given.

"Twenty-four hours later the site of injection or the swelling, if one be present, is measured and palpated.

"The measurements are not of great value in interpreting the results of the test, as sometimes where two animals show the same increase of thickness in the fold of skin one may show a definite positive reaction while the other may be negative.

"A positive reaction is indicated by the presence at the site of injection of a diffuse œdematous swelling. This swelling is ill-defined and often hot and tender, although these last two conditions are not always present.

"The advantages of the double intradermal test are as follows:—

(i) It is simple and clean.
(ii) It does not disturb the routine of the farm or dairy.
(iii) The animals have not to be kept indoors during the test as in the subcutaneous test.
(iv) There is little or no effect on milk production during the test.
(v) It is a safe test for pregnant animals.
(vi) It can be applied to very young animals.
(vii) Animals cannot be doped by giving a previous injection of tuberculin as can be done in the case of the subcutaneous text."

(4) Demonstration on the Production of a High Grade Milk and the Routine Inspection of Dairy Premises

By Mr. P. F. Dolan, d.v.s.m., Chief Veterinary Inspector, and Mr. O'Donovan, d.v.s.m., Assistant Veterinary Inspector, Dublin Corporation.

Mr. Dolan provided exhibits of suitable equipment and utensils for both cowshed and dairy and charts, with drawings to demonstrate efficient and inefficient systems of structure and drainings, etc. A cow tied in a modern tubular-fitted stall furnished an effective illustration of the proper height and width of feeding trough and length of cow-bed as well as drop at the heel and width of the channel. Mr. Dolan emphasized the great importance of all these details in the equipment of a proper cow byre. Other systems ordinarily in use in tying cows were also described and their advantages and disadvantages indicated in a practical manner.

Mr. Dolan then dealt with the production of a high-grade milk, beginning at the source, namely, a healthy clean cow in a clean byre, and showed the different methods of identification of the members of the herd by tagging and tattooing. He described and demonstrated the different systems of milking and utensils used from hand milking to the Auto-Recorder System. Here again, important details were emphasised in relation to the utensils and the method of using them.

Mr. Dolan then brought the meeting to consider the next stage in the treatment of the milk at the dairy, describing the system of cooling and bottling, and the cleansing and sterilisation of all the dairy equipment. He emphasised the effects of faulty sterilisation and the necessity of having a thermometer attachment in proper position in the steam chest. The effects of faulty cleansing on a bottle which, though sterilised, had a brown coating on the inside rendering it dirty looking and practically useless, were then shown. He further demonstrated the different types of bottles in use and the different seals and caps with the advantages and disadvantages of each from both hygienic and economic points of view. A very important point was emphasised relative to the use of defective or worn cooling apparatus causing taint in milk, the effect of which may ruin a good milk producer.

Mr. O'Donovan then described the system of routine examination of dairy premises, especially demonstrating the method of udder examination, the taking of samples and the general clinical inspection of the cattle. The cow provided furnished a splendid subject for this purpose. She was in poor condition and showed very exaggerated respirations and a chronic cough with copious sputum on the wall in front of her. She was thus a case of definite clinical symptoms of tuberculosis with chronic cough. All that was necessary was to demonstrate the tubercle bacilli. Mr. O'Donovan here described and demonstrated the method of taking and staining the sputum, emphasising that it was quite feasible for any practitioner with a microscope to do this. The interest in this case increased when he showed that the condition of the cow was not due to tuberculosis but to a pneumonia caused by other bacilli. However, he stressed the fact that the great majority of cattle with exaggerated respirations from which sputum can be obtained are cases of tuberculosis, and this typical clinical case was only the exception which warned one to take nothing for granted until proved.

Mr. O'Donovan then showed the method of identification of the cows from which samples

are taken, the entries in the Dairy-yard Examination Book, the identification of the samples at the laboratory and the examinations, both microscopically and biologically, there. He expressed the firm conviction that the best person to conduct the microscopic examination of a sample is the veterinary surgeon who takes it and has the clinical picture before his mind. He described the type of induration of the udder which was suspicious, the appearance of a suspicious secretion, the size and nature of the deposit and the cellular appearance of the field under the microscope which helped in the quick diagnosis of a case. He exhibited slides to show the cell grouping—easily observed under the low power—also slides of tuberculous sputum showing how plentiful the tubercle bacilli usually are and slides illustrative of streptococcic and staphylococcic infections.

(5 and 6) Operations (*a*) For the Removal of Anal Tumour in a Foxhound; (*b*) For Paraphimosis in a Thoroughbred Horse, by the Hon. Secretary. [An account of these operations by Professor O'Connor appears in the Clinical Section of this issue.—Ed., *V.R.*]

II.—ORDINARY MEETING

The ordinary meeting was held at 7.30 p.m., following tea.

The minutes of the previous meeting, having been circulated, were taken as read, confirmed and signed.

Correspondence:

The correspondence consisted of communications from:—

(1) Messrs. J. J. Condon, R. Byrne, T. Mulcahy, J. J. Dundon, F. W. Taylor, and Lieut.-Colonel H. T. Ryan apologising for inability to attend the meeting and wishing it success. Mr. Condon referred to the inadequate remuneration which he received for carrying out his duties under the Tuberculosis Order, and said he would like to be associated with the protest to the Minister of Local Government for his remarks to the effect that veterinary surgeons did not deserve to be excluded from the operation of the Local Services (Temporary Economies) (No. 2) Bill, 1933.

(2) Messrs. C. P. Hynes and S. R. J. Cussen, Hon. Secretaries of the Munster Veterinary Inspectors' Association, suggesting that action should be taken with a view to having veterinary surgeons excluded from the operations of the Local Services (Temporary Economies) (No. 2) Bill, 1933, saying that they knew a gentleman who had influence with the Government who was willing to approach the responsible authorities in an informal manner to lay the case of the veterinary surgeons before them, and asking the Veterinary Medical Association of Ireland to stir in the matter in the meantime.

It was unanimously decided to accept the offer of the gentleman referred to, and that Mr. O'Donovan, Mr. Magee, and Senator Parkinson be asked to accompany him in an interview with these authorities.

Mr. O'Donovan agreed to accede to the request. Mr. Magee and Senator Parkinson were not present at the meeting.

(3) Mr. P. L. Shanks, Hon. Secretary, North of Ireland Veterinary Medical Association, saying that at a recent meeting of his Association it was decided to ask the National Veterinary Medical Association to hold its annual Congress in Ireland, preferably in Belfast, in 1935, and that they had got the support of the Belfast Civic Authorities, and had secured permission to hold the Congress in the Queen's University, and would be delighted if the Veterinary Medical Association of Ireland would combine with them in issuing the invitation. It was unanimously decided to reply to the effect that the Veterinary Medical Association of Ireland would support the North of Ireland Veterinary Medical Association in inviting the National Veterinary Medical Association to hold its Annual Congress in Belfast in 1935.

(4) The National Horse Association of Great Britain, 12, Hanover Square, London, W.1 (R. A. Brown, Secretary), requesting the Veterinary Medical Association of Ireland to continue its valued support to the Association by a renewal of the annual subscription of £1 1s.

It was unanimously decided to comply with this request.

Business:

(1) *Letter to the Minister for Public Health.*—The Hon. Secretary read a draft letter to the Minister for Public Health protesting against the remarks reported to have been made by him in the debate on the proposed amendment to the Local Services (Temporary Economies) (No. 2) Bill to exclude veterinary surgeons from its scope.

On the motion of Professor Craig, seconded by Mr. Ringwood, it was unanimously decided to refer the matter for further consideration to a special meeting of the Council, with full power to act.

(2) *Sale of Vaccines by Chemists.*—Mr. J. Crowe complained that chemists throughout the country supplied vaccines direct to stock-owners, and suggested that steps should be taken with a view to preventing their supply except through a veterinary surgeon.

Professor Craig said that the Government had control over the production of vaccines, but not over their sale.

No decision was arrived at in the matter.

J. J. O'Connor, *Hon. Secretary.*

ROYAL COLLEGE OF VETERINARY SURGEONS

Membership Examination, July, 1934

LIST OF SUCCESSFUL CANDIDATES

London

FIVE YEARS' COURSE

First Examination

Ballard, Miss I. C.
Balls, D. F. V.
Barnett, E. K.
Barnett, S. F. (C)
Bennett, G. H.
*Berry, A. G.
Biddis, K. J.
†Bingham, Miss M. L.
*Butler, C. A.
Cabban, K. E. (B)
*Chivers, P. R.
Davison, Ian
*Dean, P. W.
Drake, V. A.
Edwards, J. B.
*Foulston, Wm.
*Francis, John
Fuller, L. W. C. (B)
Fussell, Miss M. E.
*Good, F. D. T.
Gray, W. van O.
*Green, R. A.
Hodgkins, R. A.
*Hunt, D. K.
*Jarvis, J. H. A.
Jolly, D. W. (B)
*Joshua, Miss J. O.
Joss, G. E.
Keast, P. H. J.
Lawfield, F. G. C.
*Lawton, Miss R.
*Lee, J. A.
Littlewood, H. K. (B)
Lochead, Miss M. E. (B)
Makinson, J. B.
*Mather, P. A.
Mead, N. St. C.
Morgan, D. G. (C)
Morgan, K. U.
Ovington, R. P. (B)
*Owen, D. W.
Parker, G. B.
Pemsel, J. D.
Ridge, J. E. M.
*Rowson, L. E. A.
Soothill, P. L. (B)
*Sparke, D. J.
*Spellman, J. E. M.
*Tunney, P. J.
Vickery, R. T.
*Walker, C. W. M.
White, Miss K. E. H. (B)
*Worden, A. N.

Second Examination

*Asplin, F. D.
Brancker, Miss W. M.
Cooke, R. G. T. (P)
Crowhurst, R. C. (H)
*Davies, C. V.
Daybell, P. M.
Ellis, J. H.
*Greatorex, J. C.
Harmer, J. B.
Harrow, W. T.
Heath, P. T.
Howat, G. B. B.
Howell, Miss D.
Humm, R. L.
Isherwood, A. D. A.
King, J. O. L.
Laugier, G. V. (H)
Lemon, D. A. (H)
Llewellin-Evans, T. G.
Mackenzie, P. Z. (H)
*MacOwan, K. D. S.
Robertson, Mrs. H. M.
Scutt, Miss C. M.
Sellers, K. C.
Skinner, H. H.
Smith, F. W. A.
Stephens, T. K. (H)
Teverson, Miss R.
White, E. T. A.
*Withers, F. W.

London

FOUR YEARS' COURSE

Class A

Scott, C. E. S.

Class B

Abbott, A. V. H. G.
Addison, Miss G.
Bayana, A. W.
*Blaxland, J. D.
Camps, E. T.
Kirk, D.
Lamb, E. G.
Leaver, E. A.
Pasfield, J. A.
Patten, Miss M. A. F.
Thomas, D. K. (S/M)
Whitling, V. S. W.

Class C

Adams, C. S.
Andrewes, F. N.
Aulton, W. M.
Brito-Babapulle, L. A. P. (H)
Chesney, R. W. L.
*Crawshaw, H. A.
Crowhurst, F. A.
Foster, A. E. C.
Glyn, M. H. C.
Hancock, Miss E. F. R.
Hickman, J.
*Kemp, Miss A. E.
McCubbin, W. J. (H)
Pott, F. C. H.
Richardson, D.
Richardson, W. T. (M/M)
Sanderson, Miss K. M.
Senior, M.
Shenton, A.
Silverman, Miss M. R. (P)
*Sparke, Miss C. C.
*Sutton, P. M.
Turnbull, N. R.
Venn, J. A. J. (M/M)
Ware, J. McW. (H)

Class D

Ahmad, M.
Amos, Miss V. J. E.
Barlow, K. I.
Evans, D.
Hughes, D. L.
Lester, L.
Lewis-Bowen, E. H.
Maffey, J. W. H.
Millar, R.
Moloney, Miss N.
Patil, S. S.
Saunders, J. E.
Scorgie, N. J.
Simmons, E. J.
*Stokes, T. F.
Stuart, K.
Thomas, R. J.
Wells, C. W.
Williams, E. P.

(*To be continued.*)

* Denotes 2nd Class Honours.
† Denotes 1st Class Honours.
(B) Denotes credit in Biology.
(C) Denotes credit in Chemistry and Physics.
(P) Denotes credit in Physiology (including Biochemistry).
(H) Denotes credit in Histology and Embryology.
(S/M) Denotes credit in Stable Management.
(M/M) Denotes credit in Materia Medica, etc.

IN PARLIAMENT

The Milk Bill Debate

(*Continued from page* 807).

The Milk Bill was read the third time in the House of Commons on June 29th, and passed.

Following is the continuation of our reproduction of extracts from the *Hansard* report of this important debate—

On the same clause (Clause 9—*Payments for securing pure milk*):

Sir A. Wilson: I beg to move, in page 12, line 16, at the end, to insert:—

> "(4) For the purposes of this Act the words 'pure and free from the infection of any disease' means milk which has—
>
> (*a*) not been treated by heat in such a way as to destroy or modify its natural characteristics and to which no foreign matter such as water, skimmed milk, fat, or other substances have been added and is—
>
> (*b*) of a standard of bacteriological purity and of nutritional content;
>
> which shall be fixed from time to time by the Minister of Agriculture and the Minister of Health after a public inquiry at the cost of the Milk Marketing Board."

This Amendment, which stands in my name and the names of other Members, deals with the definition and meaning to be given to the words "pure and free from the infection of any disease." To the best of my knowledge, these words have never been defined hitherto in any way, and a great deal must hang upon the meaning which is attached to them. The Amendment proposes, first, to exclude pasteurised milk or milk heated in other ways from the scope of the Bill, and from the scope of milk to receive subsidy

from Government funds. If pasteurised milk were to be regarded as eligible for the subsidy, it is clear that there would be available so much pasteurised milk on which money should be paid that the Clause would virtually cease to operate. There is another reason. The Hopkins Report, on which I pin my faith, is exceedingly lukewarm in all its references to pasteurisation. There is nothing in favour of pasteurisation in its residuary operations. It says that there is not sufficient evidence to form the presumption that pasteurisation is harmless. It avoids saying that it is beneficial. It admits that when children were fed on pasteurised milk in New York the great majority of them at once became ricketty, but they admitted that it is quite possible to replace the loss of vitamins due to heating by suitable administration of orange, lemon or citrous fruit juices which, in these days, can be obtained in that way. Anyone with a knowledge of the working class and rural districts knows very well that orange, lemon or citrous fruit juices cannot be easily and cheaply obtained. It costs something like a shilling a week to purchase the fruit to provide the necessary juice, and to suggest that pure milk means milk deprived of certain vitamins which can be replaced by something added if the mother remembers and can afford it, is not fair to the community.

If one turns to foreign countries one finds that pasteurised milk is not regarded as pure in any advanced country. In America, for example, no milk may be purchased or sold as pasteurised unless previously guaranteed and produced from tuberculin-tested herds. That is a statement which appears on page 196 of the Hopkins Report. Pasteurised milk is not, I understand, allowed to be sold at all for human consumption in Germany or Denmark. Pasteurisation is regarded as a commercial process which has great value in preventing deterioration and decay in milk, and does not necessarily render it germ-free or germ-proof. All butter is made compulsorily from pasteurised milk, but milk is not normally sold or allowed to be sold in public if it is pasteurised. There are good reasons for not imposing pasteurised milk as pure milk upon the population of this country without much more evidence and inquiry. I rely entirely upon the Hopkins Report for the views that I am expressing on behalf of a very large number of people outside the House, who have expressed their opinions very strongly. The Hopkins Report was not designed primarily to discuss the question of pasteurisation. It dealt with cattle diseases, and the reference to pure milk and pasteurisation were incidental to its terms of reference. In the second place, we have no evidence before us. We do not know what evidence was put before the Committee of the Economic Advisory Council, of which Sir Frederick Gowland Hopkins was the chairman. The evidence is not available, not even, as in the case of a recent Departmental Committee's Report, at a cost of £2 19s. 6d. a copy. It cannot be maintained that the inquiry was dealing with the question of public health, tuberculosis, and purity of milk. It was dealing with cattle diseases, and it is perfectly fair, from the list of witnesses, to suggest that had the committee been dealing primarily with the question of pure milk they would have heard other and more extensive evidence.

The second point dealt with by the second part of the Amendment is the setting up of a scientific technical body on which the Ministry of Health and the Ministry of Agriculture would be represented, which would advise from time to time on what might reasonably be regarded as pure milk, free from the infection of any disease. It is quite clear that absolute and perfect freedom from any disease is not obtainable, and probably in the opinion of medical men may not be desirable. A perfectly sterile fluid would almost certainly expose more children to disease than a fluid not wholly sterile but containing some of the good germs. These are matters which cannot be discussed except by experts. My object in moving the Amendment is to secure a standing body, which will be paid for by the Marketing Board, on which the Ministry of Agriculture and the Ministry of Health would be represented, which would sit in public, which would hear expert evidence from competent witnesses and would decide from time to time on the question of pure milk. That body would also be able to take into account the question of nutrition, what constitutes good pasturage, and what milk might reasonably be expected in any given month in the year in a given area, from a given herd, instead of having hard and fast regulations which are liable to cause great injustice to individual farmers, resulting in the bulking of milk and the adulteration of milk, so to speak, in order to produce milk of a dead level of fair average.

Sir Nairne Stewart Sandeman: Can the hon. and gallant Member say what is the cost of the process of pasteurisation?

Sir A. Wilson: I have no idea what the cost of pasteurisation is, but I know from the report of the Hopkins Committee that pasteurisation can only safely be performed under very close inspection by highly qualified men, that unless it is very skilfully performed it may do more harm than good, and that it is not accessible to the ordinary small farmer.

Brigadier-General Brown: I beg to second the Amendment. As my hon. and gallant Friend has gone so fully into the matter I need not detain the House. The only point I wish to stress is, that if we want to produce cleaner milk I do not think that pasteurisation is the way to encourage it. If the farmer can get his milk pasteurised he is not going to take the trouble to see that his milk is very clean. I think that if the Hopkins Committee had had more witnesses who were actually producers than those shown in the list of witnesses, they would have given more consideration to the point before even they gave their half-hearted recommendation for pasteurisation. If we wish to have clean milk for school children we must see that not only is it clean but that it is milk upon which they will thrive. On ordinary liquid milk they thrive much better than on pasteurised milk. If we want to encourage the production of clean liquid milk we must not allow local authorities to make any hard and fast rules and say that they will have nothing but pasteurised milk, and that all other liquid milk is impure. It is better to convince the producer of milk and his milkman that the object is not to get milk for pasteurisation but to get clean milk, in the best sense, fit for human consumption.

Lieut.-Colonel Sir Francis Fremantle: I do not want to go into the whole subject of pasteurisation. With some of the points put by the hon. and gallant Member for Hitchin (Sir A. Wilson) I agree, but some of them cannot be upheld on detailed examination. His criticism of the Hopkins Report is one on which he has already made up his mind. That report is much more definite than he has made out in favour of pasteurisation. I think we are all agreed as to our ultimate object, and that we do not want pasteurisation to be used in order to give the people bad or unclean

milk in any other way. We all agree that we would infinitely rather that the children should have pasteurised milk than milk which contains the germs of tuberculosis and other diseases which we know do definitely produce fatal diseases and result in the deaths of 2,500 children every year. Hon. Members opposite must recognise that fact. Pasteurisation is only the second best, but it is much better to have a second best than something which is worse. The hon. and gallant Member ridiculed pasteurisation by talking about using lemon juice or orange juice to make up for the vitamins which had been destroyed in pasteurisation, and he said that ordinary raw milk with a certain amount of germs was better than pasteurised milk. I cannot understand how anyone can suggest that you are going to get a standard of bacteriological purity and nutritional content by a public inquiry. It is absurd. All you can do is to see that the standard is revised from time to time and if it is thought advisable to inform Parliament as to the grounds on which the standard is laid down. I do not think the Amendment is required.

Sir J. Lamb: I hope the Amendment will not be pressed. I am not in favour of pasteurisation because I agree that it is only a second best, it is something which is used after milk is in a state in which it really ought not to be. That is not my objection to the Amendment. The hon. and gallant Member in paragraph (*b*) is asking that the Board of Trade shall have the power to fix a standard for designated milk. This is to be done after a public inquiry, but at the expense of the Milk Marketing Board. I object to the Amendment on that ground.

Captain Heilgers: I support the Amendment, not because I am opposed to pasteurisation, but because I am opposed to pasteurisation as it is carried out in this country to-day. It appears from the Gowland Hopkins Report that there is no proper inspection of licensed plant premises, except under the milk and dairy Orders, and there are many unlicensed plants in this country. Furthermore, it also appears from that report that in many cases pasteurised milk has been found to contain the germs of tuberculosis. With regard to what the hon. and gallant Member for St. Albans (Sir F. Fremantle) has said, two facts stand out. First, that in the countries where most raw milk is drunk tuberculosis is less, and in rural districts where there is less milk pasteurised you get a smaller incidence of tuberculosis.

Mr. Haslam: As I understand it, the object of the Amendment is to secure milk pure and free from the infection of any diesase. It is an object with which I sympathise, and with which, indeed, the whole House sympathises, but the question arises whether that object will be obtained by placing this definition in the Bill. The question of pasteurisation is one of expediency. I agree with the hon. and gallant Member for St. Albans (Sir F. Fremantle) that in many cases pasteurisation is useful and will preserve consumers of milk from disease in certain cases. On the other hand, it is not an ideal to be aimed at, and it may be used as a cloak for producing impure and inferior milk. With regard to paragraph (*b*) of the Amendment, the standard of bacteriological purity and nutritional content, that to my mind is a question which must depend entirely on the conditions of the milk supply in any particular neighbourhood. Milk fresh from the cow is the finest and best thing of all, and the nearer we get to it the better, but I feel doubtful whether any committee laying down certain standards will really be of any practical utility. I should like to hear from the Minister what the cost of this sort of proceeding is likely to be, and who the officers will be who will be testing these things.

It seems to me that to set up a hard-and-fast standard may lead authorities into immense expenditure, and largely useless expenditure, in having to provide a host of examiners. The question of "nutritional content" surely does not come within the definition of milk free from infection of any disease; it is an entirely separate matter. We all desire milk to be of the highest nutritional content, but is it a practical proposition to set up one standard of nutritional content for the whole of the country? In my view the proposition is absolutely absurd. Milk varies immensely in nutritional content. We want to get the best we can, but we may not all come up to standard, because milk in one part of the country does not come up to the standard in another part of the country. The Amendment may lead to a wasteful and expensive process. I sympathise entirely with the object in view, but I feel very doubtful indeed whether a definition like this will secure it.

Sir S. Cripps: The Amendment raises an interesting point as to how the right hon. Gentleman proposes to spend the £750,000 which Clause 9 places at his disposal for the purpose of securing a pure milk supply. The Amendment is, of course, the proposition which is already in Clause 9 defining the object of the expenditure which is authorised under that Clause. We have not yet had from the Minister any sort of definition as to what that objective is. We believe it ought to be to get pure milk from the cow, not pure milk at any later stage in the proceedings. We think it is desirable that this expenditure should not be devoted to pasteurisation. That is the object of the Amendment. Whether the Minister intends to set up any other standard besides bacteriological purity we have not yet heard. "Free from the infection of any disease" would, of course, cover the bacteriological part. We would like to hear from the Minister what is the idea in this Clause of the word "pure," apart from the words "free from the infection of any disease." I appreciate the difficulty of setting up a standard such as is required under the second part of this Amendment. On the other hand it would not be satisfactory for this Clause to be passed without the House getting some statement from the Minister as to what this money is to be spent on. I am sure that everyone here would want the money to be spent on cleaning up the herds and not the milk. It is undesirable to produce impure milk and then to clean it. We should be glad of an assurance that this money will be used in getting pure milk free from infection from the cow, and whether pasteurisation is necessary to be used as an intermediary stage until that purity is achieved, is another matter.

Sir Robert Smith: I hope the Government will not accept the Amendment, and I say that for two reasons. There is no doubt that the reason why milk has been so little in demand in this country is the fact that it will not keep. The object of the Government is to have milk produced which will keep. When that end has been reached the housewife will buy the milk. Up to now she has not bought milk because she knows that milk she bought this evening would not keep till to-morrow; it would then have gone sour. That is one of the reasons why the poor of the country have been driven to buying tinned milk. We want to get our people to use more milk. It

is better for them, whether it is made pure by pasteurisation or is pure from the start. We want the milk to be produced from herds that are free from tuberculosis. If we cannot get that we ought to take the next best step to secure that end, which is pasteurisation.

It may seem strange that I should speak in this way, because the Minister of Agriculture and I have disagreed on this subject before in this House. There was a Bill brought in years ago for the supply of milk to school children. I pleaded then that we should not give milk to children in the schools until we could be sure that it was pasteurised and free from tuberculosis. We must try to clean up our milk as much as we can. The hon. and gallant Gentleman who proposed the Amendment referred to Denmark. I do not know whether he has been to Denmark, but I have visited farms there where the milk was produced under the most appalling conditions, and it was only after sterilisation that it could be kept at all. We ought to leave the Minister and the Department free to use whatever means they consider best, by sterilisation or in any other way, to secure pure milk and create a bigger demand for it.

Mr. Skelton: The Amendment has given rise to a very interesting Debate, in which the Amendment itself, although its objects have been generally approved by the House, has not escaped criticism. That is natural. I do not think the Amendment would quite succeed in doing what its supporters would wish to do. The most convenient way in which I can deal with the questions raised is to state now what the hon. and learned Member for East Bristol (Sir S. Cripps) asked the Government to state, namely, what is the method which it is intended to apply in order to secure a supply of pure milk, free from infection. The main method will be the initiation of a scheme for the cleaning of the herds, and I think the House will agree that that is the right method. It may be said, " If that is so, why do we not accept the Amendment?" I ask hon. Members to look at the Amendment. Its first proposition is that milk, to be pure, must not be treated by heat in such a way as to destroy or modify its natural characteristics. That is to say, that milk which is to be classed as pure must never be pasteurised.

My hon. and gallant Friend, who moved it, referred to America. The Gowland Hopkins report regards pasteurisation as useful commercially but not as a health measure. If we were to accept the Amendment it would go far to prohibit the pasteurisation of milk. Without qualification I say that there is no intention that any development of pasteurisation should take the place of the cleaning up of the herds, so far as this Clause is concerned. Within that general policy there is, however, this to be added: One hon. Member mentioned that at present a great deal of work is done which is called pasteurisation but is not pasteurisation at all, so far as any beneficial results are concerned. It might well be that under this Bill it would be worth while to make some investigation into the proper method of pasteurisation. But the House must not take it that I am trying even to find a loophole in what I have said. The main method in which this money will be spent will be the cleaning up of the herds.

That deals with the first proposition of the Amendment. The other two propositions are very far removed from anything that ought to be in our minds when we are considering methods for securing a clean milk supply by means of clean herds. It is singularly difficult for us to say that for the purpose of this Clause milk which might be produced from the most perfectly clean herds could not be regarded as clean if at a later stage such foreign matter as water, skimmed milk, fat or other substances have been added to it. That has nothing to do with a pure milk supply; that is adulteration, which is sufficiently dealt with by existing legislation. There is a certain confusion of thought, I suggest, in trying to deal with the problem of adulteration in a Clause which is clearly intended to deal with the improvement of the supply at the source. To make the granting of money for the purpose of cleaning up the herds dependent upon the milk reaching a particular standard of bacteriological purity and nutritional content seems to take one very far away indeed from the vitally important purpose of the Clause. With regard to these two last points, my hon. and gallant Friend, like the philosopher who took all knowledge for his province, seems determined to use this Amendment as a means of raking in every possible consideration whereby milk at the moment when it touches our lips shall be free from any possible contamination, human or bovine. On these general lines I ask him not to press the Amendment, while I thank him for having moved it, because it has given the Government an opportunity of reiterating their determination to use the great bulk of the money, which is being provided here, for the necessary work of cleaning up the herds.

Sir A. Wilson: In view of what has been said by the hon. Gentleman, I beg to ask leave to withdraw the Amendment.

The Amendment was by leave withdrawn, the Motion for the third reading carried and, subsequently, the Bill was passed.

The Milk Bill in the Lords

On the Motion for the second reading in the House of Lords on July 12th, Lord Marley said that the Minister of Agriculture was undertaking a campaign to ensure the inspection and registration of tubercle-free herds. The campaign would take a long time. He asked if the Government would agree to give to the country reports at regular intervals of six months as to the progress of the emergence of clean herds as a result of that expenditure. The country would willingly double and treble the expenditure already agreed upon if they could get a proportionate increase in the non-affected herds, and eventually get all the cattle completely free from tuberculosis. Although members of the Labour Party in the House of Commons did not support the proposal to pay a premium for pure milk, he believed it to be a very good preliminary measure.

Lord Rowallan said he hoped that the Government would do something to standardize tuberculin. If a scheme of free testing was introduced it would take many years before the ill-effects were overcome. Large numbers of people would go in for the test, and owing to the fact that there was an insufficiency of skilled veterinary officers to conduct the tests the results would be anomalous and, in consequence, confidence among the farmers and the public would be destroyed. There was no short route to health, but the shortest route was by drinking raw milk produced by cleanly methods from healthy cows. (Hear, hear.)

Earl De La Warr, replying to the debate, said that for the purpose of the final testing of herds only standardised tuberculin would be used. It was hoped in the future to introduce legislation to make possible the control of the purchase of certain therapeutic substances, and tuberculin

would certainly be one of the first substances to be dealt with.

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The following questions and answers have been recorded in the House of Commons recently:—

Animals (Poisoning)

Sir R. Gower asked the Home Secretary whether, having regard to the large number of cases of poisoning in dogs and other animals which have occurred recently, he will consider the desirability of further restricting, by the introduction of legislation or otherwise, the sale of poisonous substances?

Sir J. Gilmour: It is already an offence punishable by a fine not exceeding £10 to put any poison or poisoned food or liquid in any place to which dogs and other domestic animals have access, and I have no information that would lead me to believe that any amendment of the law in this respect is necessary.

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Poultry (Reorganisation Commission's Report)

Lieut.-Colonel Heneage asked the Minister of Agriculture if he has any information as to when the Reorganisation Commission on Poultry is likely to report?

Mr. Elliot: I understand that the Reorganisation Commission hope to be in a position to submit their report during the autumn.

EDINBURGH—MEETING PLACE OF N.V.M.A. CONGRESS, 1934

"Every true Scotsman believes Edinburgh to be the most picturesque city in the world. . . . The quick life of to-day sounding around the relics of antiquity, and overshadowed by the august traditions of a kingdom, makes residence in Edinburgh more impressive than residence in any other British city. I have just come in—surely it never looked so fair before? What a poem is that Princes Street! The puppets of the busy, many-coloured hour move about on its pavement, while across the ravine Time has piled up the Old Town, ridge by ridge, gray as a rocky coast washed and worn by the foam of centuries; peaked and jagged by gable and roof; windowed from basement to cope; the whole surmounted by St. Giles's airy crown. The New is there looking at the Old. Two Times are brought face to face, and are yet separated by a thousand years.

". . . . Residence in Edinburgh is an education in itself. Its beauty refines one like being in love. It is perennial, like a play of Shakespeare's. Nothing can stale its infinite variety. . . .

"Throned on crags, Edinburgh takes every eye; and, not content with supremacy in beauty, she claims an intellectual supremacy also. She is a patrician amongst British cities, 'A penniless lass wi' a lang pedigree.'

"On the intellectual man, living or working in Edinburgh, the light comes through the stained window of the past. To-day's event is not raw and *brusque;* it comes draped in romantic colour, lined with ancient gules and or."

Alexander Smith.
"A Summer in Skye."

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

July 23rd.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

July 30th-Aug. 3rd, 1934.—National Veterinary Medical Association Congress, Edinburgh.

Aug. 1st.—Annual General Meeting of the Ladies' Veterinary Benevolent Guild, at Edinburgh.

Aug. 2nd.—Royal (Dick) Veterinary College Alumnus Association Meeting and Dinner at the Royal British Hotel, Edinburgh, at 7 p.m.

Aug. 13th-18th, 1934.—Twelfth International Veterinary Congress, New York.

Aug. 24th.—Entries due for Jubilee Memorial Bursary Examination.

Sept. 24th-25th.—Examination for award of Jubilee Memorial Bursary.

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REPORTS OF CLINICAL CASES

It has been decided to offer payment to recorders of clinical articles published in *The Veterinary Record.*

It is suggested that, wherever possible, the adoption of a uniform method of recording cases is desirable, and the following is issued as a guide for the recording of clinical cases for publication.

Records should be as complete as possible, concise, and written in the third person. Photographs, radiographs, sketches and diagrams should be submitted if advantageous.

When describing lesions, dimensions should be indicated as far as possible by measurements, or by comparison with common objects.

SUBJECT.—**Age, sex and breed. In the case of cross-bred small animals—approximate bodyweight.**

HISTORY.—**Duration of disease. History of in-contacts. Nature of onset and course. Diet. Previous medical history.**

EXAMINATION.—**Eyes, ears, skin, mouth and teeth. Limbs and action. Thorax, abdomen, urinary and genital tracts. Examination of urine, fæces, discharges, skin scrapings.**

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS.

PROGNOSIS.

TREATMENT.—**In surgical cases details of anæsthesia and operation.**

COURSE OF DISEASE—OUTCOME.

POST-MORTEM EXAMINATION.—**Record should be comprehensive and findings carefully described.**

DISCUSSION.

Payment for published articles is at the rate of 10s. a column.

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N.V.M.A. CONGRESS AT EDINBURGH

Copies of papers to be presented to Congress, together with the Association's Hand-book, have been despatched to all members. Any member who has not yet received these should communicate at once with the office.

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PERSONAL

Mr. James Anderson's Doctorate.—At the recent ceremony of Graduation at the University of Edinburgh, Mr. James Anderson, B.Sc., M.R.C.V.S., received (*in absentia*), the degree of PH.D. of the Faculty of Science, his thesis being "A Summary of the Processes of Reproduction, with special reference to a Biological Test for Pregnancy in the Equine."

Mr. Anderson is at present at the Veterinary Research Laboratory, Kabété, Kenya.

Mr. Richard M. Brown, eldest son of Mr. Esmond Brown, M.R.C.V.S., has passed the final examination for the degrees M.B., CH.B. of the Faculty of Medicine, University of Edinburgh.

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R.C.V.S. OBITUARY

DOUTHWAITE, Frederick, Captain late R.A.V.C., Park Cottage, Coleshill. Graduated N. Edinburgh, May 21st, 1895, died July 14th, 1934, aged 62 years.

LINDSAY, James, Albany Bank, Dumfries. Graduated New Edinburgh, May 28th, 1890; died July 12th, 1934, aged 65 years.

THE LATE MR. JAMES LINDSAY

Mr. Lindsay, was a native of Whitmuirhaugh, near Kelson, and after graduation he entered into partnership with the late Mr. J. McIntosh, of Dumfries, ultimately succeeding him as veterinary surgeon for the burgh.

From more recent date he acted in a similar capacity in the district for the Department of Agriculture. After a period in partnership with Mr. Andrew Young, he retired from general practice in 1927, but continued to hold his public appointments and to act as a consultant.

Throughout the south-west and much further afield, Mr. Lindsay was recognised as a clever surgeon, and his services were widely requisitioned. Moreover, the profession recognised the value of his work on the preventative aspect of veterinary medicine, and also his efforts in preserving the status of the calling. In both these connections he was at one time a frequent contributor to the veterinary journals. He filled for a period the office of president of the Dumfries and Galloway Division of the National Veterinary Medical Association, and he also took an active interest in the Veterinary Benevolent and Mutual Defence Society.

While his profession was his main interest, he found time to give the community the benefit of his talents on local public bodies. He was a member of the Parish Council from 1922 until 1930, when the work was merged in the Town Council, and he was also a member of the old Water Commission. Throughout his life he was a keen horseman, and for many years he hunted with the Dumfriesshire Hounds. Even after illness overtook him he was present at a meet. Mr. Lindsay is survived by his widow and a sister, Mrs. Cameron, who is in New Zealand.

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SCARCITY OF VETERINARY SURGEONS

COUNTY OFFER TO SCHOOL CHILDREN

(By a Special Correspondent)

There is a scarcity of veterinary surgeons throughout the country, and this has given rise to serious complaint among agriculturists in some districts.

This matter was referred to at the last meeting of the Merionethshire Agricultural Education Committee, when it was resolved that the agricultural organiser should interview the headmasters of the county secondary schools for the purpose of asking more pupils to proceed to a course of veterinary education.

It was announced that the committee would be prepared to consider applications for financial assistance towards the expenses of such a course.

LOSSES OF AGRICULTURISTS

In his report to the committee, the agricultural organiser (Mr. Edwin Jones) remarked that a considerable number of agriculturists in the county had suffered losses among lambs this year through the disease known as "Lamb Dysentery."

The attention of the committee was called to the fact that there are two veterinary surgeons at Bangor College at the service of the agriculturists in the county to advise them in connection with outbreaks of disease of this kind, as it is their work to make investigations into special diseases.

It was agreed that the organiser should ask them to arrange to address meetings at different centres towards the end of the year to explain the nature of some of the diseases affecting farm stock, and the appropriate measures to seek prevention of losses.

One of the members said that there were only two veterinary surgeons in the county, and that there was a scarcity throughout the country.

According to every indication there will soon be a large demand for men and women who have undergone training for this work. They will have to conform with the various measures of the Min-

istry of Agriculture.—*Y Cymro*, Saturday, July 14th, 1934.

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VETERINARY INSPECTION FOR THE ACCREDITING OF DAIRY HERDS

At a meeting of the Conservative Parliamentary Agricultural Committee held on July 17th, a deputation was appointed to wait on the Minister of Health on the provision by local authorities of adequate veterinary inspection in connection with the scheme for accredited herds under the Milk Marketing Board. This is considered to be a matter of urgent importance in view of the fact that the scheme is to operate as from October 1st, and it is desirable that local authorities in every district should be in a position to provide for an efficient veterinary service by that date, so that the scheme may come into operation simultaneously over the whole country.

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DAIRY CATTLE INSPECTION IN SUFFOLK

The East Suffolk County Council, for its part, has adopted the report of a conference held between representatives of East and West Suffolk, at which it was reported that in the two counties there were between 27,000 and 28,000 dairy cattle. The conference considered a recommendation of the Committee appointed by the Prime Minister, under the chairmanship of Professor Sir Gowland Hopkins, one of the principal of which was that a routine veterinary inspection of all dairy cattle should be undertaken, as had been the established practice in Scotland for a considerable period, and had been adopted by 19 English authorities. The conference recommended that such inspection should be carried out twice a year, that two inspectors be appointed, a chief inspector at £500 per annum, rising to £600, and an assistant at a salary of £400, rising to £500, with travelling expenses estimated at not more than £300 a year; and, further, that representaion should be made to the Government that it was desirable that assistance by way of a grant should be given towards the cost.

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A TRYPANOSOMIASIS COMMITTEE AND BUREAU FOR SOUTHERN RHODESIA

The Government of Southern Rhodesia has appointed a Trypanosomiasis Committee to consider questions relating to the Trypanosomiasis of man and animals in that country, to submit reports and to make recommendations to government.

The Prime Minister, the Hon. G. Martin Huggins, F.R.C.S., has consented to act as President and Chairman of the Committee, which includes the Medical Director, the Chief Veterinary Surgeon, The Director of Geological Survey, The Director of the Pasteur Institute, the Director of Agriculture, the Director of Veterinary Research, the Chief Entomologist, the Chief Chemist, The Beit Research Worker in Trypanosomiasis and representatives of Clinical Medicine, Botany, Forestry, Meteorology, Toxicology, Mycology, and Native Affairs.

It is also creating a Trypanosomiasis Bureau for the collection, collation and distribution of information concerning the trypanosomiases in Southern Rhodesia and elsewhere.

Mr. L. E. W. Bevan, M.R.C.V.S., Beit Research Worker in Trypanosomiasis, has agreed to act as Hon. Secretary of the Committee and Director of the Bureau.

Members of the Veterinary Profession and others interested in the study of Trypanosomiasis are invited to assist the Committee by forwarding information and literature to The Trypanosomiasis Bureau, P.O. Box 675, Salisbury, Southern Rhodesia.

Such contributions will be gratefully acknowledged and the name of the correspondent will be placed upon the mailing list of the Bureau.

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ARMY VETERINARY SERVICE

London Gazette—War Office—Territorial Army

July 17th.—Maj. and Bt. Lt.-Col. J. S. Bowden, O.B.E., T.D., to be Lt.-Col. (June 1).

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UNIFORMITY OF DRUGS: NEED FOR AN INTERNATIONAL PHARMACOPŒIA

In his presidential address to the Pharmaceutical Conference, Dr. C. H. Hampshire said that for reasons similar to those which led in this country to the demand for a British Pharmacopœia, there had arisen from time to time a desire for the unification of the standards for drugs and of the strengths and formulas of preparations through the medium of an International Pharmacopœia. The advantages of such uniformity, particularly, but by no means exclusively, on the Continent of Europe, were obvious.

Differences in national standards for widely used materials were a hindrance to the spread of medical knowledge, an inconvenience to pharmacists who had to dispense prescriptions brought from various countries, and a source of trouble and possibly of danger to travellers, who might experience delay in receiving medicines which had to be specially made or procured. An International Pharmacopœia would remove those difficulties, would tend to economy of production, and would facilitate commerce in drugs.

After outlining the steps already taken to secure international action, and the limited agreements now in force, Dr. Hampshire said there was need for continuous and united pressure if anything substantial was to be accomplished beyond the progress already made. The unification of assay methods, of manufacturing processes and of tests and standards was an object worthy of thought, enthusiasm, and effort on the part of those interested in the sciences of medicine and pharmacy.

The formation of a permanent central organisation to maintain contacts among the various national commissions, to arrange for collaborative investigations and to collect and distribute reports on subjects related to pharmacopœial revision, was an urgently necessary step which would do much to bring about the desired result.

VETERINARIAN SHOT ON " DOURINE " DUTY

" Following an attempt to execute an order of the magistrate that certain horses suffering from dourine be destroyed," says *The Eastern Province Herald* (Port Elizabeth), " Dr. K. Schultz, the Government Veterinary Officer in Kimberley, was seriously wounded when shots were fired at him. He was operated upon by a doctor from Kuruman, and though his condition is grave every hope is entertained for his recovery." [Dr. Schultz has since made good progress in hospital at Kimberley.—Ed. *V.R.*]

Six people have been arrested (the prisoners including three women and none being allowed bail), and the charge of attempted murder will be heard in due course.

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MARKING OF IMPORTED MEAT

An Order in Council has been made under the Merchandise Marks Act, 1926, requiring imported chilled and salted beef, boneless beef and veal, frozen mutton and lamb, frozen and salted pork, and edible offals to be marked with an indication of origin at the time of importation. The Order also requires that imported meat of these kinds, as well as imported frozen beef and veal, shall be marked with an indication of origin on exposure for sale and on sale, whether wholesale or by retail. The Order will come into operation on January 7th, 1935. Copies will be obtainable shortly from His Majesty's Stationery Office, Adastral House, Kingsway, London, W.C.2, price 2d. net.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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THE SELECTION OF THE COMMERCIAL HORSE

To the Editor of the Veterinary Record

Sir,—I have read with amazement an article upon " The Selection of the Commercial Horse " in your issue of June 30th, and feel that if it is allowed to pass without criticism, judges of this class of animal either in or out of our profession may be accused of lack of interest or, worse still, acquiescence by silence. Basing my views on an experience extending into nearly forty years of purchase and management of a very large stud of purely commercial horses, I find many points to which one could take violent exception. One cannot do justice to the subject in the brief scope of a letter, but the following examples strike me as specially notable:—

" No sound horse has been seen in Britain."
" Fifteen horses examined without a purchase."
" We cannot get horses."
" A clear week's trial."
" A small head."
" A long ear."
" A good bend in the hock."
" Odd shaped feet pay little attention to."
" Straight pasterns are best."
" Round bone preferable to flat bone."
" High ringbone, ankle bone, sidebone, curb, bursal affections, thoroughpin, all of little consequence."

These and the comments thereon are a few of what, in my opinion, are grave errors of judgment. I have invariably found more sound horses than otherwise, and in the premier breed of commercial horse, *i.e.*, the Old English Cart Horse or Shire, 2 per cent. is a high proportion of unsoundness found at their annual exhibition. In casual purchasing, I have found the majority of commercial animals sound and have never seen a group of fifteen horses of purchasable age together anywhere from which a number could not have been selected. A week's trial may be allowed, but invariably the price is from 15 per cent. to 20 per cent. more, and in any case the veterinary surgeon is employed to detect weaknesses which the trial would reveal. " A small head and a long ear "—to the horseman this speaks for itself, as also do the comments on odd-shaped feet and straight pasterns; in fact, such an animal would be without balance, in conformation something like a cow, and would not be given a moment's thought. Round bone, in my experience, is very bad; it grows coarse, bushy, brittle hair, does not stand wear and tear and denotes lack of quality and breeding. The unsoundnesses mentioned may not for a time interfere with usefulness, but are prone to do so sooner or later.

In conclusion, one might justifiably enquire whether the horses purchased by the writer of the article are required to pull loads in competition with other forms of transport, or maintained out of sentiment.

Yours faithfully,
T. Eaton Jones, F.R.C.V.S.

" Red Cot,"
17, Beach Lawn,
Waterloo,
Near Liverpool.
July 13th, 1934.

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WHOLE-TIME OR PART-TIME INSPECTORS

To the Editor of the Veterinary Record

Sir,—Personally, I do not see where the difficulty comes in. If the State scheme for eradication of certain animal diseases succeeds everyone will be wealthier and the general practitioner will score with the rest.

Surely the Economic Advisory Council's Report will provide remunerative work directly and indirectly for all veterinarians.

If 300 men are employed by the State, it would appear to help the private practitioner.

Again, if districts are left without practitioners the adjacent private veterinary surgeons will score. We need not fear that these districts will remain without practitioners for long. Whether the work is done by whole-time men, part-time men, or both is partly a question of arithmetic (which is the cheaper).

Whether men are better specialising on this State work or doing private practice as well is the only question open to argument.

Yours faithfully,
J. M. Armfield,

Garth Steading,
Chipstead, Surrey.
July 14th, 1934.

The Editor acknowledges, with thanks, the receipt of the following:—

Communications from Lieut.-Colonel J. W. Brittlebank (Manchester), Mr. J. Stanley Chivers (Histon), Major A. C. Duncan (Cirencester), Dr. J. A. Nicholson (Cambridge), Captain A. W. N. Pillers (Liverpool), and Mr. Thos. Parker (Newcastle-on-Tyne). Report of a meeting of the Lancashire Division, N.V.M.A., from Mr. A. L. Mullen, Hon. Secretary.

MAJOR JOSEPH ABSON, D.S.O., T.D., F.R.C.V.S.